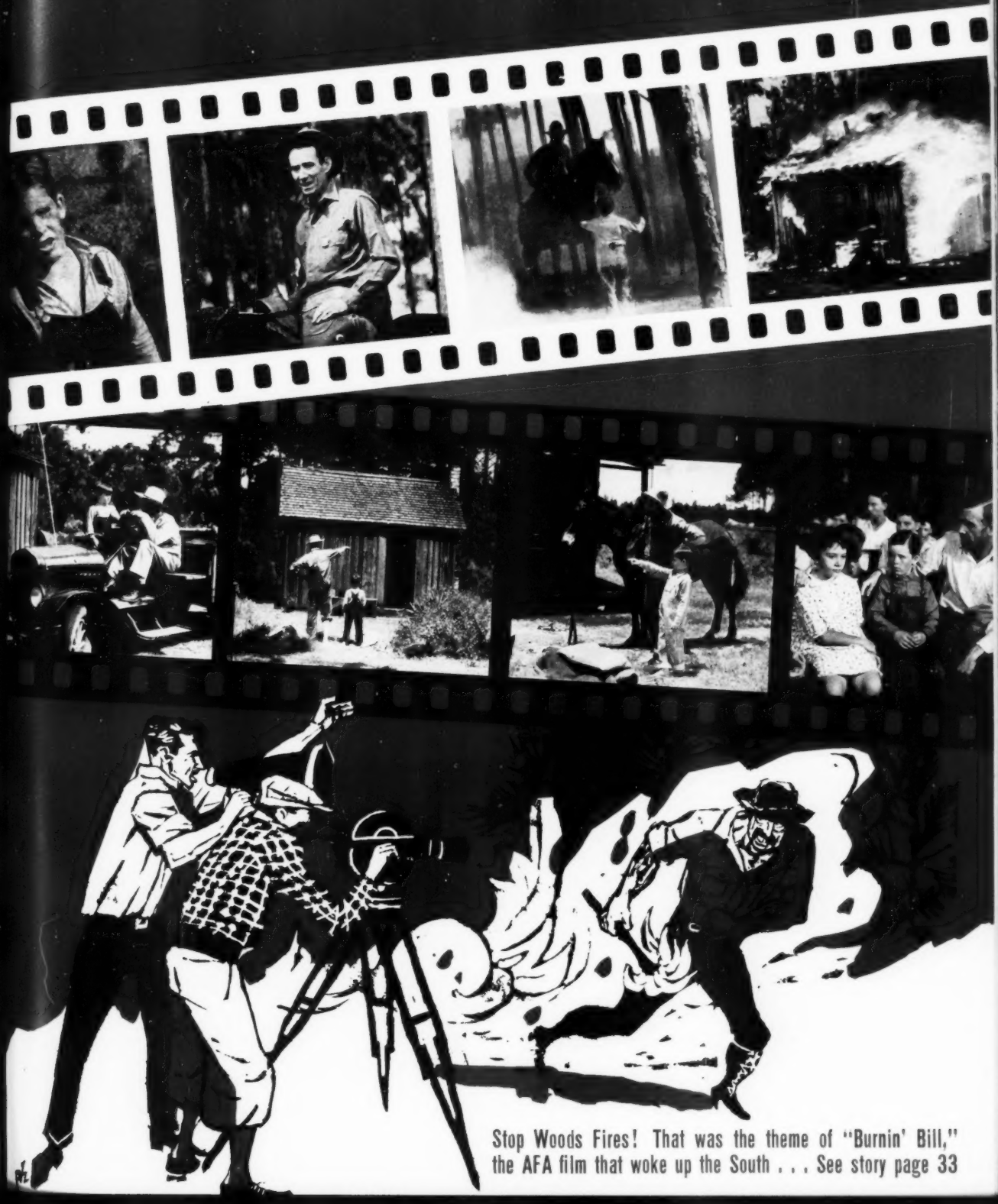
American

FORESTS

AUGUST, 1965 50 CENTS



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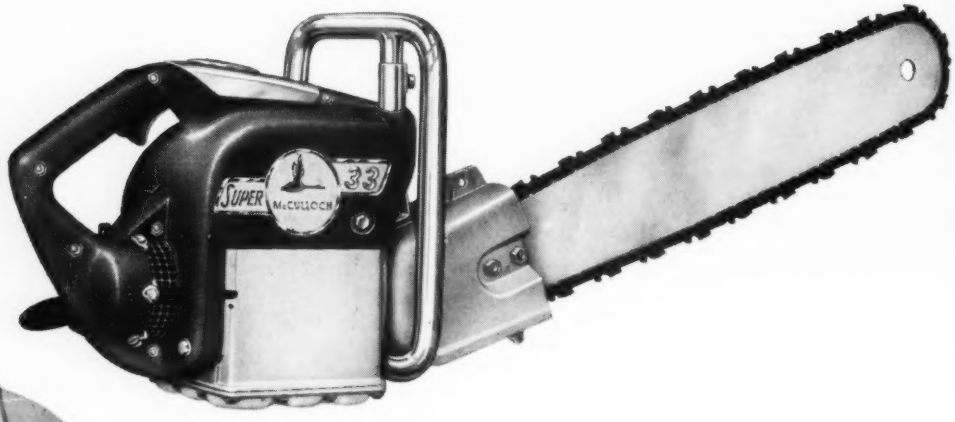

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Volume 61
No. 8
August, 1955

American FORESTS

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COVER • *Stop Woods Fires! That was the theme of AFA's prize film "Burnin' Bill" shown in all southern states thirty years ago. Shown at every crossroads, it started the South's forestry march upward. But fires still plague southern forestry. For a history of southern forestry, its gains and its failures, turn to page 33.*

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The American Forestry Association, publishers of AMERICAN FORESTS, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and their part in the social and economic life of the nation Created in 1875, it is the oldest national forest conservation organization in America

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Letters

Water

EDITOR:

Like many of your readers, I have followed the articles published by *American Forests* on water with great interest. The articles on the Muskingum Conservancy District, the Watershed Congress, the New York State project and many others presented useful information and contributed to our store of knowledge.

At the same time, for what it is worth, I sense an appalling lack of fundamental knowledge on this big and comparatively new problem. Many of the meetings reported on concern themselves with policy—and who is to do what—rather than what is to be done and how on the watershed itself. At the same time, apparently little effort has been made to reconcile the various points of view—that of such people as water engineers on the one hand, soil experts on the other—and even on the part of the foresters themselves.

I sometimes wonder how much we actually know about this subject in its broad sense and in terms of broad application on the part of the various interested groups. Of the lot, the Muskingum project seems to come the closest to adding up to something concrete but here again is merely one specific case and problems vary in different parts of the country.

My point is this. As a practical followup to another Watershed Congress, what would be the advantages of a small working conference of perhaps thirty or forty people—experts of broad gauge and from every phase of water activity in the nation? Army engineers, reclamation engineers, SCS specialists, foresters, farmers, businessmen, educators and journalists? Would it be possible, first, to assemble such a group, and secondly, could such a group arrive at some basic truths on which they all agree that could be presented to the public as a working tool in applying practical cures to the watersheds themselves?

In its program of several years ago, The American Forestry Association included a section on water. It's a good section but it needs amplification and broadening. Why not take this section one step further and convene a second Higgins Lake Conference on practical water problems? I believe a conference of this type would contribute much at this particular time and its findings would provide material for a superlatively fine and informative issue of your magazine. Think it over.

Charles McCaffrey
Garden City
New York

Developments in Wyoming

EDITOR:

I get more solid enjoyment and valuable information from *American Forests* than any other magazine I receive regularly.

I was particularly interested in the article, "Crisis in Our Parks" by Anthony Netboy in the May, 1955, issue. I wonder why in the section on the rundown, overcrowded condition of Yellowstone National Park, the author did not mention the efforts of the State of Wyoming to get posses-

(*Turn to page* 63)

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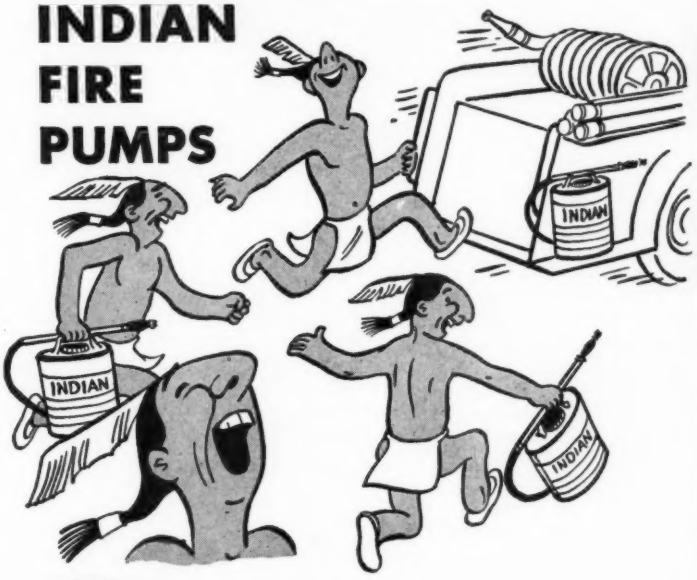

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President Signs Land Law Reform

AFA's "Key Role" Cited in amending mining laws

THE key role played by The American Forestry Association in pressing for land law reforms that culminated with Presidential approval on July 23 was cited by William M. Blair in a special story to the *New York Times* of Sunday, July 24.

In affixing his signature at Geneva to bills aimed at correcting abuses to public lands under the old mining laws, the President noted that both the Secretaries of Interior and Agriculture "strongly endorsed" the measures and stated "(The bills) will make possible sound management of the timber resources of our public lands. At the same time the legislation will greatly improve the position of the bona fide miners by enabling them to increase their valuable contribution to the development of the Nation's mineral resources."

In his *Times* article Mr. Blair said that "a key role was played by The American Forestry Association. This conservation group lent its offices as a neutral meeting place to bring together on February 10 the long-time antagonists over use of public lands for mining. . .

"The meeting February 10 resulted from a telephone call to Orme Lewis, assistant secretary of the Interior (similar calls were made to Agriculture Department leaders and representatives of the mining industry) by Lowell Besley, executive director forester of The American Forestry Association. It brought together top officials. . ."

Public lands managers last month were lauding the new legislation that received the support of both Houses of Congress. Forest Service Chief R. E. McArdle told Mr. Blair that his agency has more than 100 million board feet of timber tied up by unpatented mining claims in national forests valued at 112 million dollars.

By ALBERT G. HALL

COMMISSION REPORTS HIGHLIGHT THE FORESTRY NEWS THIS MONTH. Both the Commission on Organization of the Executive Branch of the Government (Hoover Commission) and the Commission on Intergovernmental Relations (Kestnbaum Commission) have completed their work and have reported to the President. The Hoover Commission's report on water resources is discussed on page 61. Its report on federal real estate also is of interest, particularly a recommendation for a study of federal rural lands and for the development of uniform policy for all agencies involved in control of federal lands. The forest management agencies, Forest Service, Bureau of Land Management, and Indian Service are already seeking to bring some of their policies, particularly in regard to timber appraisals and sales, into something approaching uniformity. The Hoover Commission's recommendations may result in legislation appropriation of funds for a more far-reaching study.

FEDERAL-STATE RELATIONS AND RELATED RESOURCE MATTERS were given considerable study by the Kestnbaum Commission, and while the Commission recognizes greater participation of the states as a sound economic and social policy, it did not go all-out as many persons expected in recommending reduction of federal participation in state natural resource programs. To the contrary, the Commission's report may be looked upon as endorsement of the current level of federal participation and encouragement for still greater participation. While the Commission was far from being unanimous in its forestry recommendations (there were federalists pulling in one direction and non-federalists pulling in the other), it points the way to continuing grants-in-aid for the activities under thhe Clark-McNary Act.

FEDERAL COOPERATION IN REFORESTATION ACTIVITIES OF THE STATES should be eliminated, the Kestnbaum Commission says, and the funds now devoted to that activity should be applied to the cooperative forest management program under which, the states with federal and state funds and federal guidance perform forest management services for individual forest owners. The Commission points out that as of 1953, the states were spending $3,600,000 annually for reforestation programs, compared with a federal grant of $447,000, indicating that the states have "ample ability and resources to carry on adequate forest planting programs." The Commission also suggests "States can and should make charges for nursery stock sufficient to defray actual production costs, thereby eliminating the need for federal subsidies."

FEDERAL FINANCIAL RESPONSIBILITY FOR STATE AND PRIVATE FOREST FIRE CONTROL should be considered, the Commission recommends, but should be held at a level not to exceed the present established basis of 25 percent of the cost of basic protection; "dollar-for-dollar requirements under this program should be continued."

A SPECIAL FUND FOR FOREST INSECT AND DISEASE CONTROL is proposed by the Commission. It found that the white pine blister rust control program is adequately financed and generally successful, but "the same cannot be said of the insect and disease control program under the Foreest Pest Control Act of 1947." States are urged also to establish special funds for this purpose.

SOIL CONSERVATION SERVICE WILL REMAIN VIRTUALLY UNTOUCHED, if the Commission recommendations are followed: "It is recommended to the Congress that the present program of soil conservation technical assistance to farmers be continued as presently organized; with the provision that in any state which, in order to improve, expand, and participate more fully in the program, submits a plan of operation satisfactory to the Secretary of Agriculture, and which agrees to appropriate funds sufficient to provide for such expansion and improvement of the program in such state, the program may be placed upon a grant-in-aid basis, with state administration of the program under the supervision of the Soil Conservation Service." This apparently means that if a state wishes to carry its own program, it may continue to do so with federal aid and supervision. Since the states are already receiving federal aid and supervision, it does not appear that the alternative suggested by the Commission will find many takers. This recommendation, coming after rumors and "leaks" of a plan to turn Soil Conservation Service activities over to the states or to the Extension Service, indicates that the supporters of the Soil Conservation Service were quite effective in their efforts to retain their status quo.

ESTABLISHMENT OF A BOARD OF REVIEW to advise the President and the Congress on a coordinated natural resources policy within the national government and between it and the states is also recommended, with the states designating an existing agency or state natural resource advisory council to coordinate state policies and administration and to facilitate cooperation with federal agencies in planning, building, and operating natural resource projects.

DISSENTERS TO PRACTICALLY EVERY RECOMMENDATION OF THE KESTNBAUM REPORT have their say in footnotes to the report. Dissention is mainly on on ideologic basis. Some of the members wanting to assure that federal participation will not be lessened if the states assume a greater share of resource responsibility, and others hoping to reduce federal activity to the diminishing point. So, as it stands, the report doubtless will be widely quoted by almost everyone interested in natural resources, and regardless of individual philosophy one can find support for it.

TIMBER MANAGEMENT POLICIES FOR THE NATIONAL FORESTS are spelled out in a bill, H.R. 7118, introduced by Representative Hope of Kansas. Policies relating to timber sales have developed over the years; within the confines of basic legislation and on the basis of expediency and circumstances. The Hope bill restates existing laws and includes modifications believed to be desirable in the light of administrative experience.

THE BILL TO CORRECT ABUSES OF THE MINING LAWS, H.R. 5891, has been passed by both House and Senate and is awaiting the President's signature. In effect, it separates surface from mineral rights in the filing of mining claims, allowing the miner to utilize such timber as may be necessary to development of this claim, but retains federal control and ownership of the timber prior to patent.

TENNESSEE VALLEY AUTHORITY'S RESOURCE DEVELOPMENT PROGRAM will continue in Fiscal Year 1956 with $1,000,000 authorization. The Budget request for $1,000,000 ($400,000 from appropriations and $600,000 to be derived from TVA operations) had been reduced by the House to $600,000,all to come from TVA operations. The Senate voted for the full Budget request as defined above. The conference report, approved by the House accepts the Senate action. Thus this phase of TVA's program has again gone through a familiar pattern of reduction by the House and restoration by the Senate.

THE CONTROVERSIAL ECHO PARK DAM PROPOSAL included in the Senate version of the Upper Colorado River Storage Project (S. 500), has been eliminated from the House version, H.R. 3383. It is anticipated that the conferees now trying to reconcile the two bills will now accept the House elimination of Echo Park in order to assure authorization of the entire project. However, there is also the possibility that language may be included to authorize further study of the Echo Park controversy.

EDITORIAL

YOUTH — Our Most Valuable Resource

Last month the bullet-riddled bodies of two girls were found in a small park that lies next to a quiet residential neighborhood just over the Maryland line outside of Washington, D. C. A teen-ager was suspected in the still unsolved double murder. The same week in Chicago a young hoodlum smirked into the cameras as he confessed the slaying of a member of a rival gang of teen terrorists. Almost every day in New York, Houston, San Francisco, New Orleans and practically every other city across the breadth and width of the land police blotters are filled with the misdeeds of youngsters who have gone wrong. Juvenile delinquents, they are called. And they have become one of the most malignant social festers of our time.

We are not saying anything here that hasn't been said before. Any responsible person is aware of the magnitude of the problem posed by the 10-year-olds and the 12-year-olds and the kids of all ages who have learned to flaunt the laws of society. What has driven these youngsters outside the law isn't exactly clear. Maybe the parents are to blame. Maybe it's the frantic modern age. Maybe some people are "born to be bad." There are hundreds of conjectures.

But what thinking people have at last come to realize is that the problem must be faced up to and dealt with. It can't be excused, minimized, evaded, hidden from or explained away by a bunch of psychological doubletalk. What to do, then? Nobody seems to know exactly. Police, parents, and local, state and federal officials, welfare workers and psychiatrists are exploring all avenues. All agree, however, that there's no panacea. No single answer fits all questions. The problem probably can best be worked out on a local basis.

One answer, or we should say potential or perhaps even partial answer, that seems to be worthy of thoughtful consideration is that proposed by Arthur V. Watkins, a Republican Senator from Utah. Briefly, Senator Watkins' suggestion is for Congress to set up a National Youth Rehabilitation Corps "to provide for the rehabilitation of youthful delinquents through a program of service in connection with the preservation and protection of the natural resources of the nation, such program to include general education, vocational, and military training."

Sen. Watkins, in his bill (S 1832), states as his purpose: ". . . to establish an organization and prepare a program for the rehabilitation of youths in need thereof. Such program shall include not less than one hour per week of instruction in the privileges, duties, and responsibilities of citizenship, nine hours per week of general education and vocational training, five hours per week of military training, and twenty-five hours per week in the protection, restoration, regeneration, improvement, development, utilization, maintenance, and enjoyment of the natural resources of lands and waters (including historical or archeological sites), as well as the products thereof (including forests, fish, and wildlife), belonging to, or under the jurisdiction or control of the United States, its Territories and insular possessions, and the several States." The Senator echoes the feelings of most of us when he describes youth as the United States' "most valuable resource."

What Mr. Watkins is proposing isn't exactly new. His suggested Youth Corps has certain aspects of the Civilian Conservation Corps of the thirties. The basic intent of both is to get idle boys and young men off the city streets and into the supervised, healthful atmosphere of the outdoors. One significant difference, however, is that Sen. Watkins' Youth Corps would embrace only those who have run afoul of the law. The CCC primarily was for youth without jobs, both the errant and non-errant alike.

The Senator's plan is being tried on a pilot basis in Utah (See story page 8) and administrators there say it holds high promise. While a delinquent isn't "rehabilitated" over night, the Utah test, only recently under way, seems to indicate that a youth with that kind of training has a better-than-even chance of going straight, and staying straight. At least it points him in the right direction.

Obviously, expanding the Utah plan into a nationwide program would be a difficult if not well nigh impossible task. Conditions for such a project are favorable in Utah. In many other places they are not. The machinery for handling a large-scale program would be ponderous and costly. Administration and competent supervisory personnel would be a problem.

However, aside from these obstacles, formidable as they are, we think the Senator's idea basically is a good one. If applied on a local basis, as it is in Utah, it could go a long way toward channeling a confused and rebellious youth into constructive social participation. We think it's worth a try. The out-of-doors has healed a lot of wounds. Maybe it can help to heal this one.

Bruno Kleeb, right, runs a forestry camp for boys who have gotten into trouble. Cooperating with him is Paul Sagers, director of Utah State Industrial School

FORESTRY, a Therapy

By ROBERT C. BLAIR

A YOUTHFUL thief, a teenage strongarm man and 12 other "bad" boys scrambled out of an old navy bus in Utah's wild Uinta Mountains this summer to begin what state and national youth workers hope will become a nationwide rehabilitation program.

They had traveled 60 miles from the Utah Industrial School at Ogden to the Forest Service camp near Kamas on the far-flung Wasatch National Forest.

They lost no time setting up what is believed to be the first camp of its kind in the country, a place where juvenile delinquents spend the summer working on the national forests under supervision of regular forest rangers.

The program, still in its first weeks, already has drawn praise from Forest Service officials, juvenile court judges and welfare officials. It holds promise for curing boys already gone wrong, and later, with increased facilities, it may be used to prevent others from becoming delinquent.

The Utah idea was born at Salt Lake City's Hogle Gardens Zoo. That was in the summer of 1953 when Salt Lake Rotary Club hired 25 boys to clean up zoo grounds. The boys were recruited from the city's Boys Clubs. Many were on probation from the juvenile courts. Some had never worked before. But they did a first class job. From tiger cage to turtle house the zoo was scrubbed, raked and patched.

"Those boys took real pride in their accomplishments," recalls Russell T. McDonald, welfare program inspector for Salt Lake County, who supervised the project.

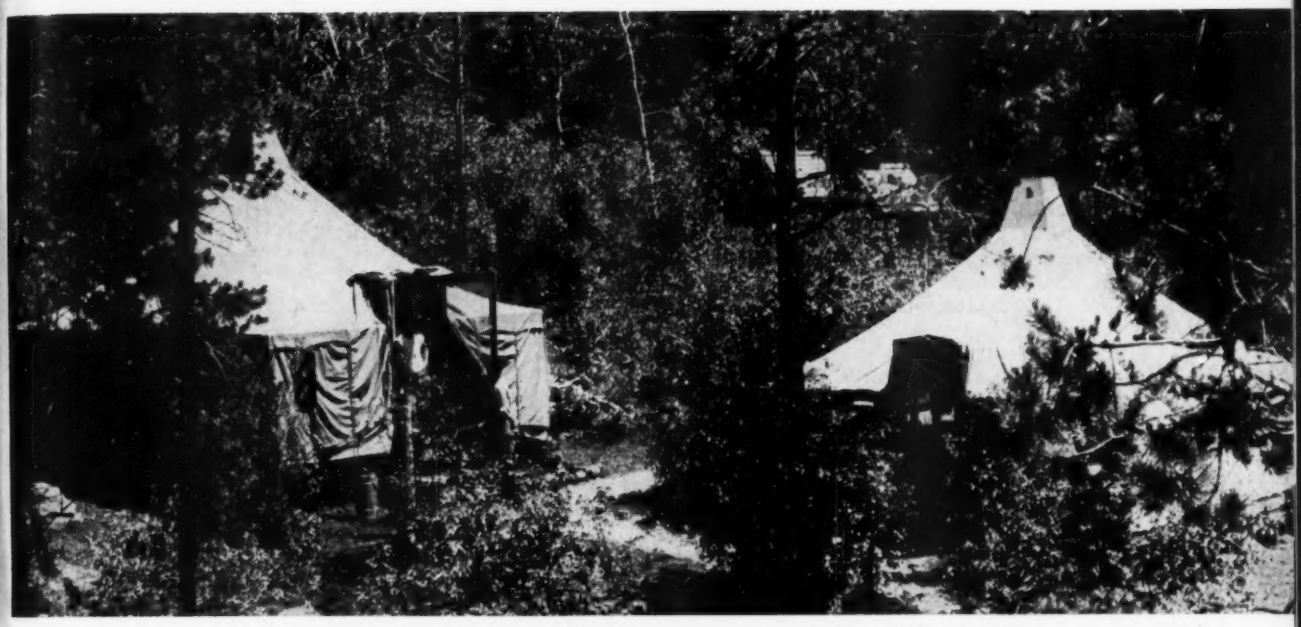
There is no such thing as a bad boy, Bruno Kleeb thinks. Some merely don't have the right chance. Kleeb is proving his case in his camp for so-called delinquent boys deep in Utah's Wasatch National Forest. His experiment is being watched with interest

"We had F. C. Koziol, supervisor of the Wasatch National Forest, come up and inspect the job. I guess that's where the idea was born. We got to figuring that with some help, boys in trouble could be given jobs in the forests.

"In 1954 Salt Lake County Commission took up the idea. Commissioners wanted to do something about the county's rising juvenile delinquency. Commissioners Lamont B. Gunderson and Adiel F. Stewart met with Mr. Koziol and others in the Forest Service to discuss the plan."

It wasn't until the early spring of 1955 that six young vandals broke into a number of summer cottages in the mountains east of Salt Lake City, inflicted $25,000 damage and unwittingly supplied the public outrage that got the present program moving.

Capt. Golden Haight, head of the Salt Lake Police Department Youth Bureau, called on Mr. Koziol, then went to Utah Welfare Commission Chairman L. C. Shoemaker for funds to get the plan started.



At Kamas camp, boys live in tents like these—seven to a tent. Boys thrive on program of forestry work and recreation. There has been no trouble. None is expected

for Delinquent Youths

In cooperation with Claud H. Pratt, superintendent of the State Industrial School (operated by the Welfare Commission), and Forest Service officials, they worked out the two pilot camps.

One, the permanent camp, is located near Kamas, about 65 miles southeast of Salt Lake City. The other, a day camp, is situated at Snow Basin in Ogden Canyon, a short distance from the Industrial School.

Charley Turner, camp helper, samples some of Mrs. Ann Kleeb's fine cooking

Twelve boys are assigned to the day camp, 14 to the permanent installation. Day workers leave the school five days a week, carry a lunch and return every night.

Permanent camp boys leave the school every Monday morning, in the surplus navy bus, live at camp until Friday and are returned to the school on weekends. They are never under guard of any kind.

The Forest Service pays each boy $1 a day for performing varied forest jobs ranging from cleaning camping areas to piling brush and clearing roads.

At the permanent camp, run by kindly Mr. and Mrs. Bruno Kleeb, the 14 boys live in two large tents, eat family style in the Kleebs' cottage and enjoy "home life" and freedom many of them never knew before.

Ann Kleeb bakes hot rolls every day, cooks 125 flapjacks every morning and packs lunches that resemble six course dinners.

Less than 100 yards from the tent flaps is one of the best trout streams in all Utah—and the boys have plenty of time in the evening to fish it.

One night a week Mr. Kleeb—the boys call him Bunny or Knockout (they say he once knocked out a cow with his bare fist) loads up the old bus and everyone goes into Kamas to the movie. They are home by 10 p.m. and usually asleep before 11 — "except that night we went to see the gorilla movie. They stayed up half the night trying to scare each other with gorilla noises," soft-spoken Bunny Kleeb remembers.

An alarm clock jangling in each of the two tents at 5:30 a.m. starts camp life going. That's when the fire boy gets out of bed and builds a fire in the tent stove. By 6:30 a.m. when his buddies roll out the tent is warm.

The boys make their beds, clean up and walk some 25 yards to the Kleebs' cottage for those flapjacks, eggs — served any style and always hot — and everything else that goes to make up a working man's breakfast.

At 8 a.m. the forest rangers come by, pick up their crews and take them to the job. By 4:30 p.m. they

are back in camp where a hot shower, a big supper and that trout stream are waiting.

Two boys stay at camp, one to help Mrs. Kleeb in the kitchen, the other to police the grounds, start a fire in the showerhouse monkey stove and other odd jobs.

Capt. Haight believes that what most youngsters who become delinquent need – and want – is work. That's what the two pilot camps are giving them. But it's more than work. They are learning skills, good work habits, conservation practices and an appreciation of the outdoors they never knew.

The Forest Service has worked out a sensible, gradual plan for "bringing the boys along" in forestry skills.

"Before we start on any job we explain to the boys just why the job must be done," Mr. Koziol says. "Suppose we put them to work helping clear the right of way for a timber access road. First we tell them why the road is necessary, how the money from the timber will be spent, how it will benefit the community. We want them to know each job has a real purpose, that it's not just to make work.

"Then we send them out with an experienced ranger. Often they work with our regular labor crews. As they become more skilled they are given jobs that will utilize those skills."

What are some of the jobs the Industrial School boys are doing?

Mr. Koziol has a long list. It includes sanitation patrol (cleaning campgrounds); fire prevention patrol; tree planting, thinning, pruning; erosion control.

Some do light road maintenance work, rake rocks from the road surface, cut and stack brush for burning after snow flies in the fall.

One of their biggest jobs is in timber stand improvement, clearing away dead, decayed or otherwise undesirable trees from a cut over area.

"We have been reluctant to use them on fire suppression because of the danger involved. And our regular crews do the more difficult jobs," the supervisor says.

For the Forest Service the program is one of multiple benefits. "We are interested in the humanitarian angle, of course, but these boys are filling one of the Forest Service's big needs," Mr. Koziol explains.

"We are short of funds to carry on the very type of work they can do best. With a tight labor market it's not as easy as it once was to find men to do the work.

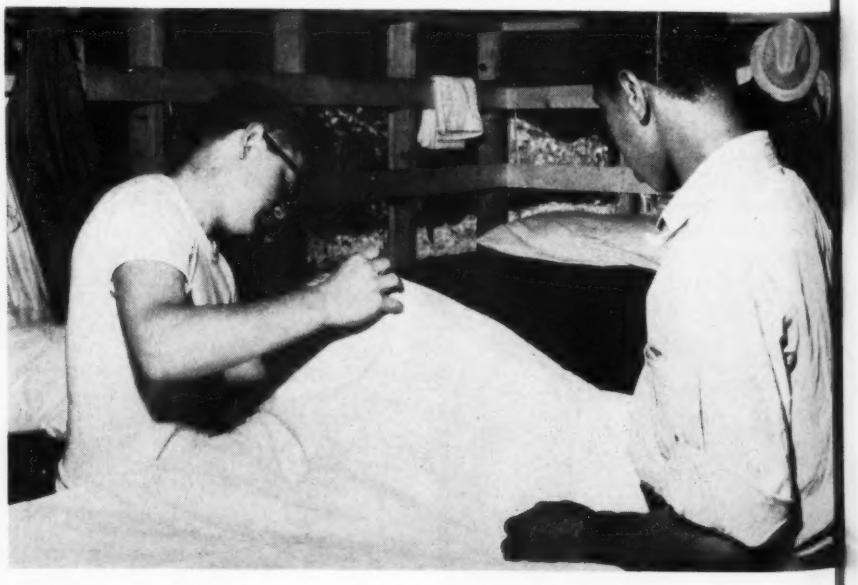
"These boys are doing it – and doing it well."

The program is financed jointly by the State Welfare Commission and the Forest Service. Mr. and Mrs. Kleeb are regular employees of

It takes a heap of stovewood to keep Mrs. Kleeb's cook stove in action. John Oppocher, Utah Industrial School student, keeps the woodbox full

Mrs. Kleeb and Marv Pixton team up in turning out over 350 rolls

"When I toss a quarter on this bed I want to see it bounce" Charley Turner tells Marvin Pixton, left. Corners are the problem, Marvin says



the school and their salaries are paid by the state.

Transportation to and from the camps and school is provided by the state as is all clothing and medical care.

Food is provided by both agencies. Foodstuffs that the school grows – eggs, fruit, vegetables – are sent up from the institution. "Cash" groceries are supplied by the Forest Service. The service also supplies living accommodations, cooking and eating equipment and transportation from the camp site to the day's job.

The Utah program, begun in mid-June and expected to continue until snow closes roads in early November, likely will cost some $5000 exclusive of Forest Service personnel salaries, estimates Paul Sagers, assistant superintendent of the Industrial School and the man charged by Supt. Pratt with making the experiment a success.

On Paul Sagers' youthful shoulders falls the touchy job of deciding which of the more than 120 boys at the school are permitted to attend camps.

Mr. Sagers, a sociologist who joined the school staff four years ago, has the help of an informal school screening committee comprised of the psychologist, social workers and Supt. Pratt.

"We screen the boys for behavior record, length of stay at the school, security risk, work habits and attitudes," Mr. Sagers points out.

From those that pass the screening and physical examination an eligibility list is compiled and from this list campers are selected. For various reasons school officials feel that some boys would be happier in the day camp while others go to the permanent camp.

A boy starting at the permanent camp in June may stay there throughout the season if he wishes. The campers are not rotated. When a vacancy occurs it is filled from the list of eligibles.

"We make this thing a much sought after honor among the students. The ones chosen are a select group," Mr. Sagers explains. "No one has to go. They are all volunteers."

Thus far there has been no trouble of any kind at the camps, and according to Paul Sagers, "we don't expect any."

A 15-year-old "former burglar" backs up Mr. Sagers. "This is a good deal. We want to keep it that way. There won't be any trouble out here."

Much of the credit for this belongs to Bruno and Ann Kleeb, an understanding, good natured couple who adopted and raised four children—a couple of them so-called unmanageable youngsters before they joined the Kleeb family.

"I tell the boys when they come up here, 'You are working with men, you want to be treated like men, then act like men.' And they do."

Another school employee claims Bunny Kleeb is the only man on the staff the boys never gripe about, "yet I have heard him lay down the law to them in pretty positive terms."

Mr. Kleeb doesn't have to be told the program is working. He sees proof of that every day.

When the boys first arrived at Kamas they scattered candy bar wrappers, orange peels and other debris over the camp area. At dinner they yelled "first on the spuds," "sling that green stuff" and other rough table talk. When dinner was over they rushed from the room like frightened buffalo. Arms and shirttails served as napkins.

A month later they were behaving like sorority girls at a preference dinner.

Now meals start with one of the "bad" boys asking blessing. In a normal voice they ask their fellow diners to "pass the potatoes." When they return from work in the woods their lunch sacks contain orange peels and wax paper. When they leave the dinner table, after asking Mrs. Kleeb if they may be excused, they walk out quietly.

"They have even begun to use napkins – and almost quit cussing," smiles fatherly Bunny Kleeb.

These are some of the tangible benefits. But the ones you can't see so easily are the most important.

"They get a lot out of feeling like they are living in a home again," explains Mr. Sagers. "Mr. and Mrs. Kleeb supply the mother-father figure – and more. They advise the boys, give them freedom of their cottage.

"Those forest rangers, they are high class people, good men for our boys to associate with. We can't overestimate the value of this association."

Russell McDonald, the Salt Lake County Welfare inspector who worked hard to get the program started, expects it to produce "untold spiritual and physical benefits.

"In addition to the regular hours, good food and wholesome exercise the boys get at camp, there is something uplifting about being in the mountains. It's good for a boy.

"They learn to do things with their hands, they take pride in helping create something. And it makes them feel better to have money in their pockets they have earned."

If the Utah experiment proves successful, what then?

The state's senior senator, Arthur V. Watkins, would like to see a similar plan operating on a national scale. He has introduced legislation

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Fishing in the trout stream that runs past Kamas camp is a favorite sport. Industrial school boy John Oppocher (above) couldn't do this on city streets

ARSON SQUAD

Photos by Louisiana Forestry Commission

Louisiana's "get tough" policy with arsonists is getting results. Spearheading the program is Detective V. E. Smith (shown above) whose "Arson Squad" provides the muscle in the movement

By ED KERR

IN Beauregard parish, Louisiana's "slow-match" kingdom, arsonists in the woods run rampant. They burn when the wind is high across the southwest Louisiana cutovers, and in this open-range country there's not even the proverbial barbed-wire fence between them and the north pole.

They are "slow match" artists who tie matches to the center of a piece of cotton rope, light the rope ends and "let 'er fly" into the woods. By the time the rope burns down to the matches and they ignite, the arsonist is safely away from the scene of his crime.

Investigator Horace Bienvenu knew all this back in February after three months of constant prowling on thousands of miles of dusty roads. You never could tell when or where they would strike—that is, almost never. West of DeRidder, they had burned a strip clean on the south side of the road along a two-mile stretch to "green up the grass" for cattle before spring came. They had burned only on the south side, naturally, because the wind had been out of the north for some time and they were obliged to throw their slow matches from the road in an automobile to make escape easier and swifter. They'd hit the north side soon, but they had to wait for the wind to change.

On St. Valentine's day the wind did change, and Bienvenu was staked out off the road waiting for them. The plan worked. Minutes before dark, a pickup truck slightly the worse for wear came down the road very slowly with the lights off. At intervals of about a half-minute, Bienvenu saw an arc of light travel from the truck to the nearby woods. On the fifth one, he sprung into action. Blocking the road with his car first, he walked up to the surprised driver and jotted down all necessary information, then started gathering up his evidence. All slow matches, which were still smoldering,

were right where the driver had thrown them. He filed charges the next morning.

This was the first time an arsonist had ever been caught in the act of setting fire to the woods in Louisiana by an enforcement officer. Bienvenu's evidence and eye-witness account of the crime resulted in a conviction and sentence of 30 days in jail.

Horace Bienvenu is one of five woods-wise forestry investigators who comprise State Forester James E. Mixon's arson squad. Under the direction of V. E. Smith, career detective and long time advocate of stricter law enforcement in the woods, Mixon's "get tough" program is now a year old. In that time 175 arrests have been made and 145 persons convicted by Louisiana courts for arson or criminal negligence in letting their fires spread to lands of another.

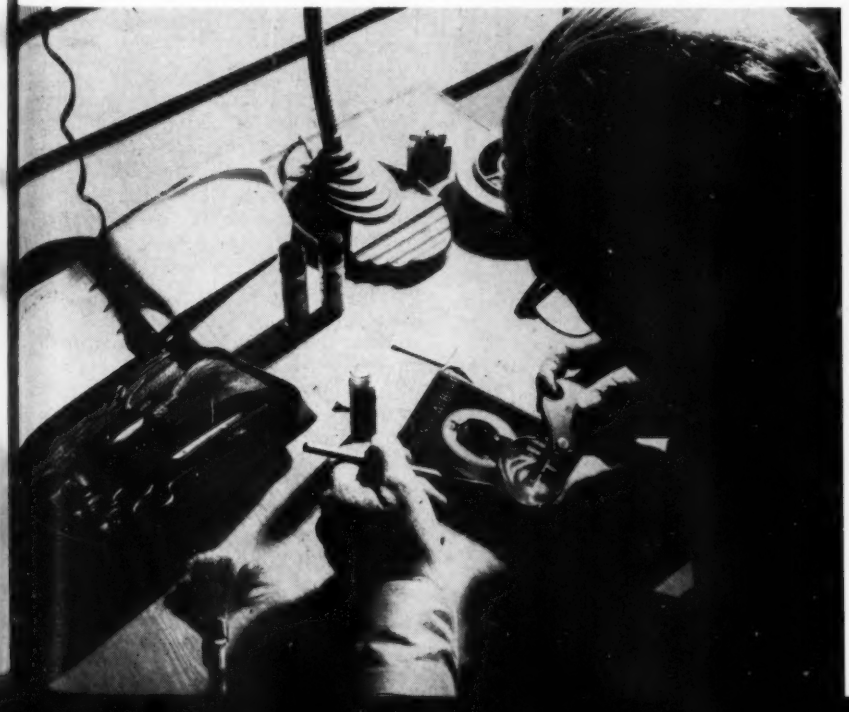
"Most people outside of the Deep South are amazed to know that deliberate arson in the woods is so serious," Mixon said, "but if we don't get started on such an enforcement program down here the arsonists are going to burn us out."

Last year, Louisiana had a record of 11,000 forest fires and approximately 75 percent of them were caused by arsonists who burn the woods for spite against the large landowner or somebody else. It is estimated that they burn a million dollars worth of timber a year.

When Mixon's war on arson started a year ago, investigators were also told to make cases on those who let their brush and debris fires spread to another's land This was the second most vicious cause of forest fires in the state and there were plenty of laws on the books against it. Educational and publicity programs had succeeded in stopping some of it but 1,000 fires a year were still being caused by such criminal negligence. However, in order to speed up the program, it was decided to allow defendants to plead guilty and pay their fines to the justice of the peace instead of dragging every case through district court. In most cases, accused persons have elected to do this as it proves embarrassing to go before the district judge. Investigator John Thompson, who handles the north Louisiana territory, made five such cases in one day with this procedure and, in one case, arrested the man,

Field personnel are being trained by arson squad to look for evidence and report all details on "sets." Cooperation of these firefighters has been good

Use of fingerprint kit is explained by Chief Smith (left) in training session. Agents shown are J. R. McPerrin, Horace Bienvenu, B. F. Hyde and John Thompson



Tobacco can, found at scene of fire, is examined by squad for fingerprints

brought him to the justice of the peace and brought him back home before the forest fire was out.

Chief Smith, who is an ex-Navy intelligence investigator and one time Texas ranger, has made every effort to train his men in legal procedure, and warn them of pitfalls waiting for the inexperienced man. This was borne out recently when an investigator accused a lawyer of allowing his brush pile to spread to someone else's land. The lawyer finally confessed but then asked the investigator to take the amount of the fine to the justice of the peace for him. If he had fallen for this trick, no matter how good his intentions, the investigator would have ruined his reputation and that of the Commission, also.

No "get tough" enforcement program can go for long without outbursts of trouble, as was seen in the Livingston parish "blowup" last March when 900 forests fires were set in one month purely for spite. This was no case of cattlemen burning for pasture or arson fires breaking out now and then. It was organized burning which claimed 8,000 acres of forest land before their spite was vented. The entire arson squad moved in.

In a little over a week, one farmer held fire crews at gunpoint and refused to let them into a fire, Chief Smith got caught in a running gun battle by arsonists whom he had caught in the act, and an accused arsonist charged Chief Smith and Investigator B. F. Hyde with kidnapping after they preferred arson charges against him. When the smoke cleared, the farmer in the first case found himself fined for his actions and Smith and Hyde naturally were both cleared of the kidnapping charges. Unfortunately, however, the armed arsonists were never apprehended.

The latest tool to be tried by the squad is the use of bloodhounds. Due to the usual lack of substantial evidence at the scene of a fire, bloodhounds would seem to be the answer to an investigator's dream; but it's too early to tell yet. Warden Maurice Sigler of Angola State Penitentiary, "They'll catch 'em if the man touched the ground."

"Except for the arsonist, the fire crewmen are the first to arrive at a fire," Smith pointed out. "They can save the investigator much time by finding evidence when they arrive and saving it for the investigator.

"During the mop-up operation, the crewmen cover almost every inch of the fire area. If they're alert, they can pick up evidence such as tobacco cans or cigarette packages which may bear fingerprints, and find horse and automobile tracks leading from the fire."

When the program started, a policy of "straight-down-the-line" enforcement was initiated. When the man is caught and there is enough evidence at hand, he is prosecuted. The forest landowner whose land is burned is not brought into the picture at all, because it is felt that he has no place in law enforcement. He lets himself in for trouble when he shows he has something to say about prosecution of a case. The Commission feels that the sooner the landowner divorces himself from all aspects of law enforcement, the quicker he will eliminate at least one source of scorn now held against the large landowner by his neighbor.

At present, if a landowner wants no law enforcement on his land by the Commission, his wishes are honored and agents are told not to go in the area. In the absence of such a request, however, the agents' orders are to seek out the arsonists and criminally negligent and prosecute if the evidence warrants.

The increased attention to law enforcement in Louisiana has not meant that organized educational programs have fallen by the wayside. Far from it. The educational program is in full swing, but it's now thought of in two categories. School materials, leaflets, radio programs, newspaper—these are used to educate everyone prone to education.

The arson squad will have to educate the others.

Agent Hyde takes a plaster cast of tire print found near scene of fire. Tire tracks provide helpful leads that result in convictions

With a portable radio and lunch. Agent Hyde is on "stake-out." Like all forms of detective work, forestry investigation requires patience

A professor of forestry provides the answer to the often-posed question:

How Fast Does A Tree Grow?

By WILLIAM M. HARLOW

PERHAPS before answering this question, we should ask another—in what manner do trees grow? Everyone has noticed that trees grow taller and also larger in diameter, each spring and summer, but the way in which they do so escapes most of us. Even certain lumberjacks have thought that new wood is formed at the center of the tree, and this pushes the old wood toward the outside. Because of such belief, they thought the growing tree suffered no injury from having its bark hacked away or otherwise damaged! Another mistaken idea is that a tree grows in height by stretching like a rubber hose. This is illustrated by the question "If you drive a nail in a tree trunk, five feet from the ground, and the tree grows two feet a year in height for three years, how high above the ground will the nail be?"

Each spring as the bud scales open, notice how a tiny green shoot emerges from each twig tip of the previous season, elongates rapidly and usually has made most of its length growth by mid-June (latitude of central New York). Meantime, by a process no less marvelous, there is built a new layer of wood over every square inch of the tree's surface between the inner bark and the wood of the previous season. By the end of the summer, this new layer of wood has extended also to the very tips of the new roots and twigs. Exactly how all this is accomplished is a fascinating and important story in itself. The above synopsis at least is necessary to appreciate the illustrations of tree cross-sections shown.

When a tree trunk or branch is sawed crosswise and the exposed end sanded, the growth layers appear as concentric bands called annual rings. The life history of a tree, its struggle to survive and grow, the kind of weather it experienced, and attacks of leaf-eating insects are all recorded in the rings, and can be deciphered wholly or in part, by a careful study of the tree's cross-section. If a tree grows by itself, in the open, with no other ones close enough to shade it or compete with it underground, if it suffers little or no damage to its leaves, the factories where it makes its food, and if it grows on a slope where water does not stand during periods of heavy rainfall, then there is a strong correlation between ring width and amount of rainfall each season. Drs. A. E. Douglas and Edmund Shulman at the University of Arizona, and others have used this principle to develop the fascinating science of dendrochronology or study of climate, present and past, as reflected in the ring patterns of trees.

Collecting tree cross-sections is an interesting hobby. Herewith are illustrations of three remarkable ones taken from a collection acquired over a period of more than thirty years.

At the top is a section of Monterey pine grown in New Zealand. To grow an eight inch tree in seven years in a temperate climate is fast work indeed! But this is only part of the story. Monterey pine is native to California where it is found as a scrubby distorted tree of picturesque appearance, along the coast. No one to look at it in its native state would say that it had any worthwhile prospects as a champion quick producer of wood. Since there were no true pines native in New Zealand, seeds of a number of north temperate zone ones were taken there to see what

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Above, end section of Monterey pine, seven years old, eight inches in diameter. Left, a "tree" of black spruce, 50 years old and 14 inches tall. Lower left, end section of same (¼ inch in diameter) enlarged many times. Below, end section of white ash, 100 yrs. old

MISSION 66

As it points toward its 50th anniversary in 1966, the National Park Service is launching a 10-year plan to overcome all problems it now faces

By CONRAD L. WIRTH

MISSION 66 is the National Park Service title of a new project for the purpose of strengthening the protection of the great national park areas, and at the same time providing development for an ever increasing number of park visitors. It is not enough to develop to fit today's needs, even though present facilities are greatly overtaxed. This nation with its live and dynamic economy will continue to use its parks in increasing numbers, and planning must be for tomorrow. In this case the 1966 target date is particularly fitting, for it is also the Golden Anniversary of the creation of the National Park Service.

The basic act of August 25, 1916, creating the National Park Service, established two fundamental policies. They are to protect the parks, and at the same time provide for public enjoyment under conditions which will insure that they remain unimpaired for the enjoyment of future generations. These principles have guided every activity of this Service for nearly 40 years, but the results have placed the scenic and historic heritages, which are the areas of the National Park System, in danger of being "loved to death."

To protect these delicate areas from overuse is a most difficult problem. Overuse can destroy the areas of the National Park System, and this must never happen. Completion of protective measures before it is too late, and better public service, are the purposes of MISSION 66. In this study the entire staff of the National Park Service is on record as supporting the ideals and the vision of the pioneers in the national park movement, and are committed to a program which will carry these same inspiring concepts forward and fit them into a modern world.

Thus MISSION 66 is an intensive study of all the problems facing the National Park Service — protection, staffing, interpretation, use, development, financing, needed legislation, forest protection, fire—and all other phases of park management. The Staff and Steering Committee for this project are to produce a comprehensive and integrated program for reaching in 1966 the goals established in 1916. This study involves every employee of the National Park Service, as the basic data from which the final plan is made, and the detailed plans, must be provided by the men in the parks who are most familiar with the immediate geography and use pattern.

In each unit of the System the starting point is a study of the basic values of that unit—why it was made a part of the National Park System. Once this is clearly defined, then the problems of protecting these values and providing public enjoyment of them can be solved. It is of more than casual interest that the solution to many of these problems may be found in old reports or historic studies made in the past, but because they dealt with only one phase of the over-all problem could not be put into practice, so the reports were filed. Once a new look is taken at the entire protection, interpretation, and operating picture the previous recommendations may provide practical solutions.

A look to the future, using the best available indices of coming travel patterns, shows that travel to the national parks will continue to increase about as rapidly as over the past decade. Nearly 50 million visitors used the National Park System in 1954, and it is anticipated that a 60% increase by 1966 will bring nearly 80 million. This presents quite a different problem than merely planning to patch up the present development plan and make it do. In many instances drastic changes in operating patterns are indicated to bring protection and development into harmony with this anticipated load.

These changes involve the way things are done in many instances. For example, construction of short connecting link roads in a few places, will permit one-way traffic over some sections of park highways, providing the opportunity for many more people to enjoy park experiences without further extensive development. In other places, provision obviously should be made for some alternative to great cleared parking spaces for cars, possibly through construction of something similar to multiple level parking ramps which fit into a convenient hillside.

The central office Staff and Steering Committee for MISSION 66 have been concerned with the development of experimental precepts to guide themselves and the park staffs in certain pilot studies to test the validity of their new thinking. These precepts are incomplete, but they initially state that public use, benefit, and enjoyment of a park is the best protection of this park from major threats of adverse use or encroachment. But, to achieve specific protection goals within a park, the best control is properly planned and executed development. Thus, the unpaved roadways and trails of Yosemite Valley a quarter of a century

Park Director Conrad L. Wirth

ago, brought a pattern of dusty roads, of dust in the air and on the trees. There was constant destruction of plants as visitors tried to get away from the dust by forcing their way into the brush. Road and trail paving has changed all this, and today the vegetative cover on the floor of the Valley is probably in better condition than it was years ago, even with a great increase in the number of visitors.

Other precepts under study involve removal of housekeeping functions of both the concessioner and the government from the strategic areas of the national parks. Need for such developments as offices, shops, houses and warehouses should be examined, and they should be located outside the park if possible, but at least they should not be in the centers of visitor use. Emphasis should be on attractive and natural presentation of the wonders of nature or of history, and intrusive developments of campgrounds, picnic areas or concessions should be studied to determine if they are needed or if they are located in the right place. Thorough consideration is being given to what might be called the day-use concept for the truly significant places, and provision of ample opportunity for visitors to see and to experience the wonders of this nation, without destroying the very things they value.

Certainly, one of the objectives of MISSION 66 will be an early completion of airports adjacent to the parks to take full advantage of this modern form of transportation. Attention must be given to the problem posed by the helicopter. This newly important passenger vehicle has some obvious advantages — it does not eat grass and destroy mountain meadows; it does not require disfiguring trail construction. Yet, it is a noisy contraption, and it would take away something of the joy of a hike on a mountain trail, and the pleasure of a long horseback trip. The park service must go slowly in recognition of this form of transportation.

One solution to many of the park problems would appear to be a rationing of park use, or establishment of limits or quotas. However, on careful analysis this is quite impractical. Certain types of areas can obviously handle only so many people, as for example, the Statue of Liberty. There is no need for a limit at this point, for the elevators will carry only so many a day. Others must be content with enjoyment of developments at the base of the Statue. But, for the great natural area the principle which is guiding the MISSION 66 Committee and Staff *is that the parks belong to the people, and they have a right to use them.* It is the conviction of the workers on this project that such use can be handled even beyond 1966 by application of various modern management principles, such as the one-way roads mentioned previously. Automaton of protection and interpretive devices must be used, even with better staffing, for sufficient manpower and space cannot be provided to furnish individual service to visitors, as has been done with pride by the National Park Service for many years.

Spread of use throughout a wider season is indicated as a definite requirement. This past winter a number of snowsled expeditions from West Yellowstone to Old Faithful demonstrated that good equipment, and careful scheduling can make this an inspiring and relatively safe experience. Winter use areas report this past winter that only about a third of the visitors came to ski—most of them came to enjoy a national park in its winter aspect. This type of use is far less destructive to the parks than summer use, and provides an opportunity for scenic appreciation which cannot be duplicated. Thus, it is apparent that a longer season of use is a part of the future pattern.

Spread of use geographically is possible within the parks if the concentrated load is too great, but it will be done sparingly so as to give continued emphasis to protection of wilderness values. Also, mention should be made of the possible use of the parks over a longer period of the day, at least in caves. All these factors point to the conclusion that greater park use is possible by 1966 and that protection will not be significantly lessened.

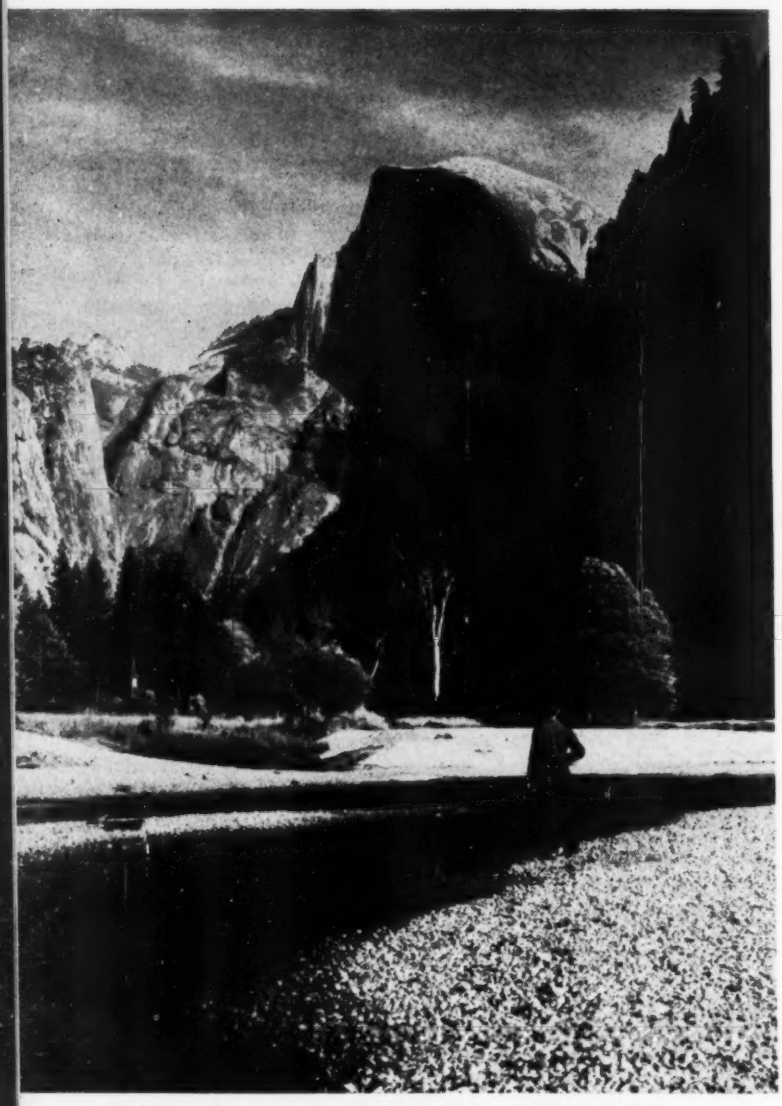
Opportunity will be provided for those who wish to make a more intimate use of the park. In one park the Superintendent finds that all provision for care of 92% of the visitors is provided on 3% of the park area. The other 8% who wish to enjoy the 97% of the park which furnishes opportunity for wilderness experiences and close association with nature, can do so readily and will continue to be welcomed.

There are many factors outside the parks themselves which are important. Major highway programs can exert real influences on park travel as they provide easy access to certain parks, or divert travel from others. National parks constitute only one element in meeting the recreation needs of this country and cannot entirely provide for the increasing recreational travel that is taking place in the nation. Therefore, in planning and developing a national park the use of adjacent buffer recreation areas must be recognized. Cooperation and assistance in park planning with other federal, state and local governmental agencies will be given in order to develop recreational facilities adequate to bear their proper part of the recreational use load of the nation.

Industrial plant locations near a park can be significant, such as the effect of Los Alamos on travel to Bandelier National Monument. All these, and many more factors, are being considered. It is a thoroughly comprehensive look at things, and is a note of optimism for the future of the park system of the United States.

Obviously, to accomplish the objectives of MISSION 66 will require money and clearance of the program through various governmental channels. Administrators of the Department of the Interior and the National Park Service are optimistic that support of the Administration and of the Congress will be received. Certainly there has been a recent surge of publicity calling attention to the dilemma of the national parks and the need for increased financing to meet public demands. All of this is a cause for anticipation that the future is bright.

It is the aim of the National Park Service, working through MISSION 66, that in 1967 announcement can be made, MISSION 66 ACCOMPLISHED.



Half Dome, on the Merced River, is one of many towering rock formations that rise 4,000 feet in Yosemite Park

Otter Point in Acadia National Park—an island off the coast of Maine on northeastern tip of the United States

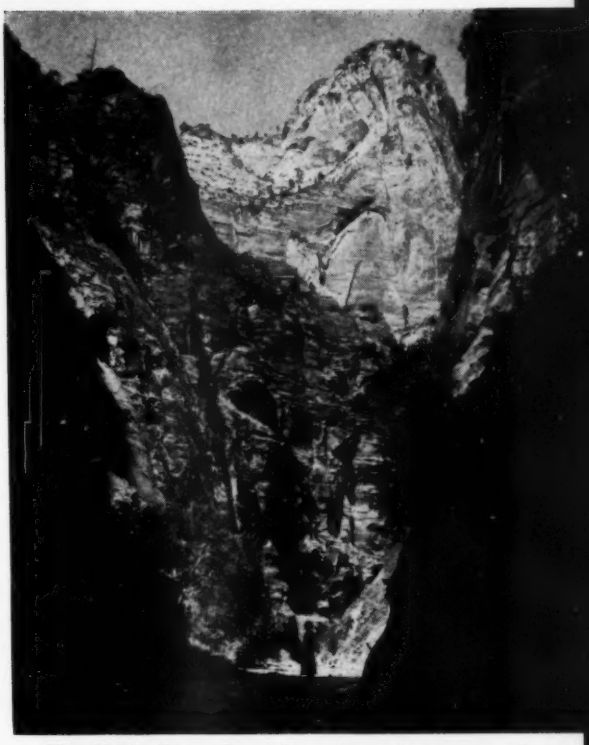
Lower Fall, Yellowstone National Park—one of Nature's superb masterpieces in the U.S.

THE PARKS

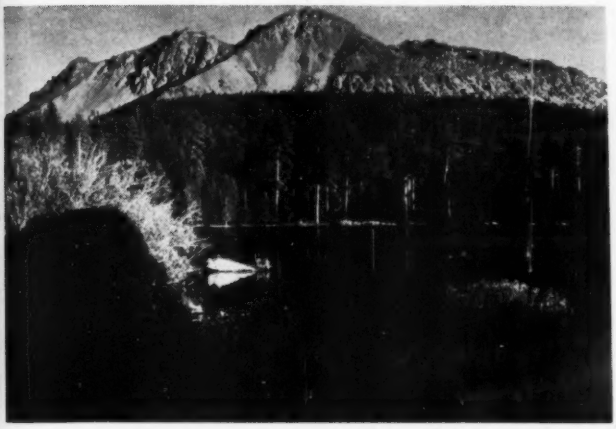
"PLEASE publish some pictures of our national parks" writes a shut-in who is enduring the heat as best she can in New York City. The camera studies by Devereux Butcher on these pages is the answer to this request. In the parlance of newspapermen, Mr. Butcher has an interesting beat. It embraces 31,000 square miles of fabulous scenery in the national parks and monuments—an area only 2200 square miles less than the whole State of Maine. Mr. Butcher has visited all of these areas at least once in his capacity as field representative of the National Parks Association. His photographic record of these excursions has afforded thousands of people many hours of pleasure as revealed in such books as "Exploring our National Parks and Monuments". These pix are some of his best.

Photos by Devereux Butcher

Olympic Mountains from Hurricane Ridge, one of the highlights of Olympic National Park



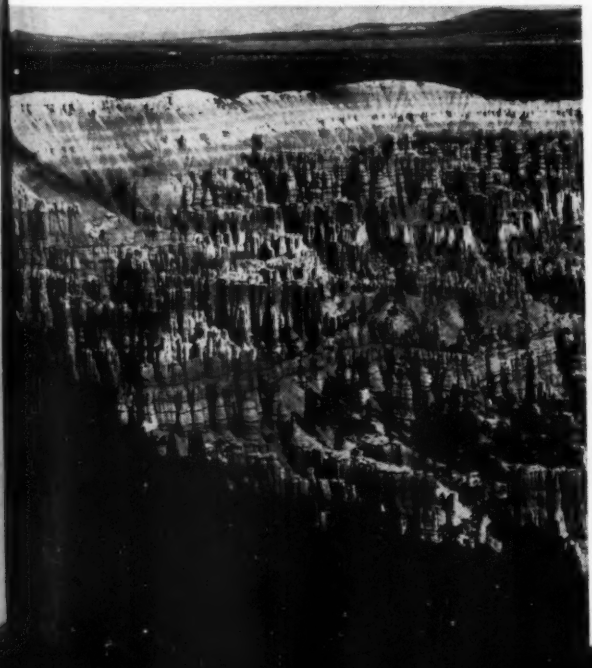
The Virgin River flows through scenic canyons of the Zion National Park along part of its 200-mile course



The Chaos Crags and lovely Manzanita Lake as seen in Lassen Volcanic National Park, Calif.

A deep lake lying in the center of an extinct volcano is the prime feature of lovely Crater Lake National Park

SIN PICTURES



Eroded limestone and sandstone formations are aglow with rich color as seen in Bryce Canyon National Park

Key man in the management program at Phillips Brook Forest is the timber marker

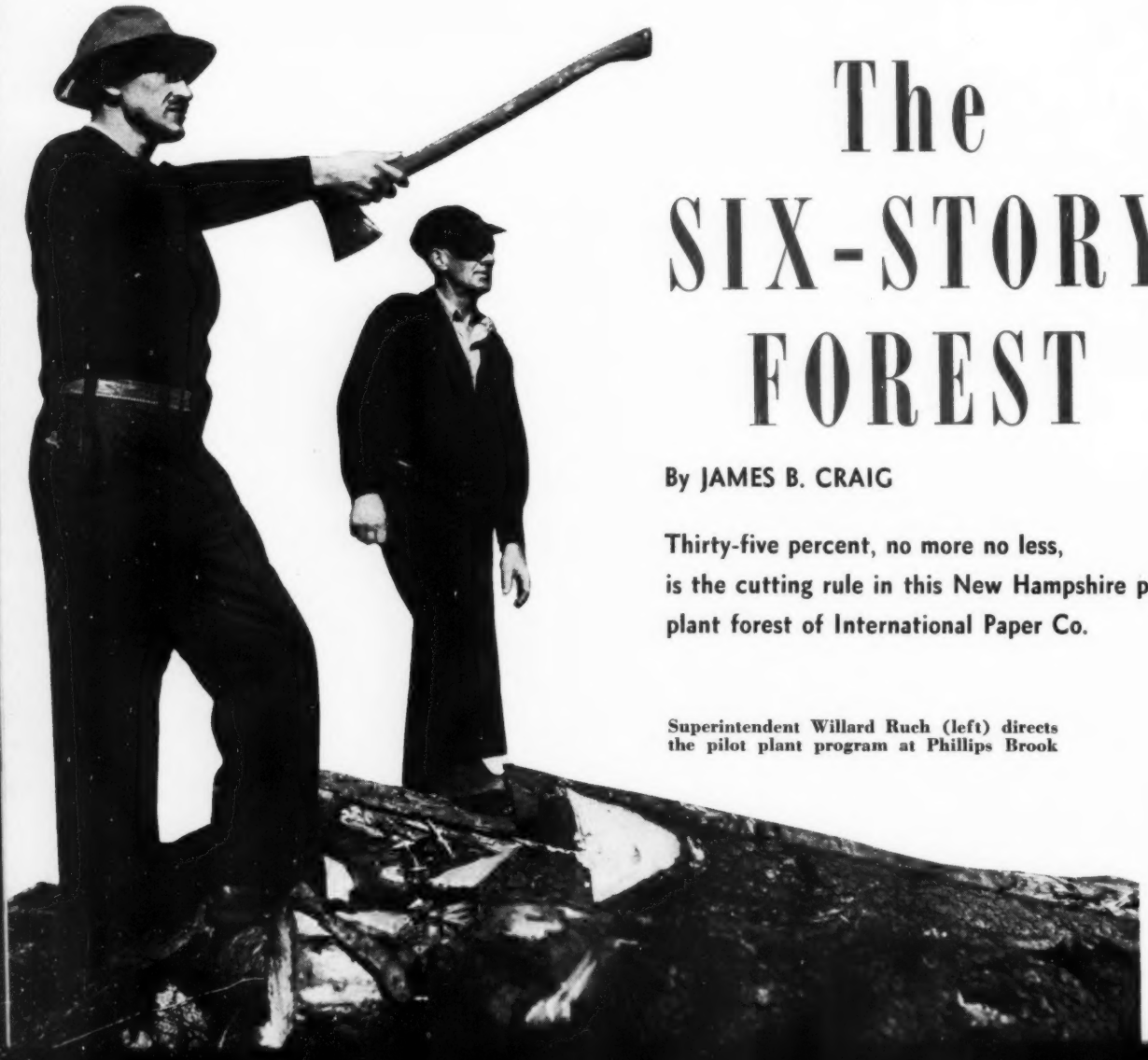
The SIX-STORY FOREST

By JAMES B. CRAIG

Thirty-five percent, no more no less, is the cutting rule in this New Hampshire pilot plant forest of International Paper Co.

IF YOU like to travel over green forests, blue lakes and mist-shrouded mountains, the Boston to Berlin (New Hampshire) air run is made to order for you. Once airborne out of Boston the talk quickly shifts to such topics as tree growing and pulpwood production. Everybody perks up for many of these passengers are either foresters or people identified with the woods industries all happy in the thought that they are leaving the hubbub of cities for a time and heading for the woods. An extra touch of excitement for those aboard on June 17 — including Brown Company's Lawrence Whittemore several seats ahead — was the impending visit of President Eisenhower and "Sherm,"as people referred to former Governor Adams. New Hampshire people, one gathered, were quietly pleased by this turn of events and planned to give the President a cordial welcome.

In the next seat, International Paper Company's Jim Carlaw unfolded a map of New Hampshire on his lap and drew a circle around a valley that starts at a point 20 miles south of the Canadian border and runs due south for a distance of 15 miles. This is IP's Phillips Brook forest and it is our destination. A pilot plant project to determine if selection cutting really works as a matter of practical forest management and economics, the area embraces 24,000 acres of second growth even age stands in which spruce, balsam fir, sugar maple and yellow birch are predominant. Basic task of IP foresters is the conversion of these even age woodlands to an all-age forest. Or to put it another way, an attempt is being made to

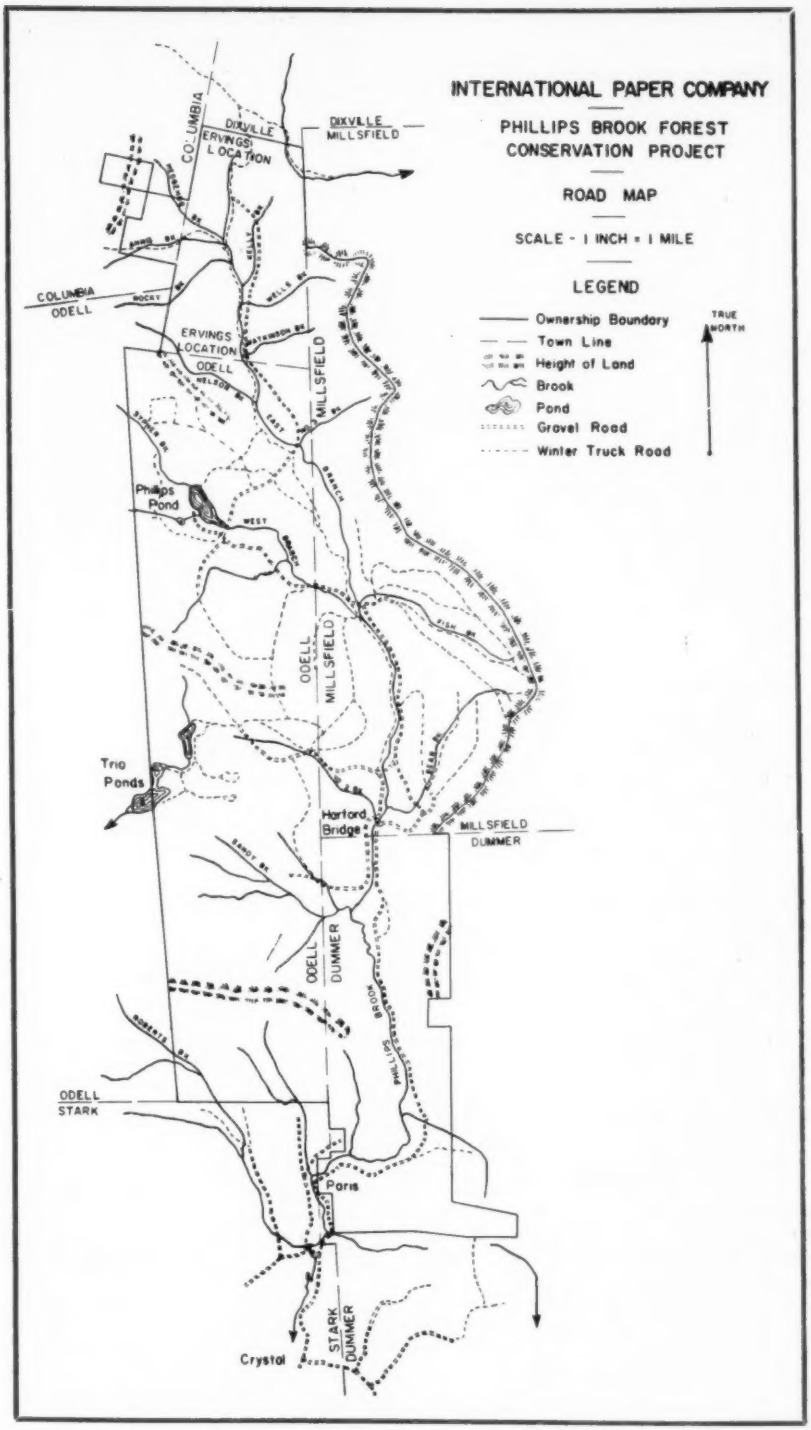


Superintendent Willard Ruch (left) directs the pilot plant program at Phillips Brook

build a six story forest, layer on layer, by inaugurating mathematically-worked out 10-year cutting cycles over a period of 60 years. Can it be done? IP foresters don't pretend to know all the answers yet. But it is their hope that their conservation project inaugurated in 1945 will enable them to grow bigger trees faster — trees that will prove impervious to the raids of tree-killing insects and diseases and less at the mercy of heavy winds.

As viewed from a map this little valley appears no more remarkable than dozens of other small drainages hidden away in this sprawling region of forests and mountains. The fact that Phillips Brook, after which the area is named, flows due south to the Ammonoosuc River which flows in turn into the Connecticut shows that forest practices on the watershed have a bearing on the lives of millions of people, for the Connecticut courses through some of the richest farm and industrial areas in the country on its 250-mile jaunt to Long Island Sound. The area is bound by rugged mountains. Most lordly is Mt. Kelsey (El. 3449) at the northernmost tip of the tract. Fifteen-acre Phillips Pond, lost in a jungle of trees in the northerly part of the forest, is the most sizable body of water. From it flows Phillips Brook which races swiftly and cleanly from an elevation of 2400 feet to 1160 feet at the lower outlet. Three other small lakes—the Trio Ponds—are noted in the westerly sector of the tract under the brow of Whitcomb mountain. These feed into Nash Brook which also flows in a southerly direction to the Ammonoosuc.

As one orients himself on the map, his interest quickens for here is what must be a delightful hidden valley, visited by comparatively few people, where foresters and loggers are working together in an effort to solve some of nature's intricate mysteries of reproduction and growth. By this time there are sights from your plane window that stir your interest too. As you leave Laconia and head out over lake Winniposaukee your eyes encounter a great sea of treetops dotted by mountains that look like islands. Squint your eyes from your lofty perch and you first see an undulating wave of graduated shades of green. Then gradually, as your focus sharpens, you will note how the dark greens of the sharp-pointed spruces at the higher elevations come down and blend with the lighter tints presented by the firs.



These in turn merge with the more polished sheens of the rounded, ball-shaped upper stories of the hardwoods at the lower elevations. Coolly beautiful in summer, one reflects that these forests must stage a veritable riot of color after the frost's first bite in autumn.

The flight over the forest's upper story is a happy experience. The things going on underneath will be examined later. Meanwhile, the White Mountain National Forest is spread out below. Majestic Mount Washington (El. 6288) slides by on the port side and your eyes are almost level with the bleak weather station on its summit. Minutes later,

your plane starts to lose altitude and the end of the air leg of the journey is in sight. As it glides into the Berlin airport sunlight is seen glinting on thousands of peeled logs that carpet the Androscoggin River for a distance of several miles. Then suddenly you are on the ground, you are met by Phillips Brook's chief forester, Don Strout, and in a comparatively short time you are travelling under the upper story of the forest operation. It divides this particular forest into 26 working compartments, divided in turn into 5,000 subcompartments. The road net is the best guarantee that the trees in those compartments and their subdivisions are being managed efficiently, that fires are being controlled and that tree insects, diseases and pests are being held in check. The logging roads on this Phillips Brook tract run into a lot of mileage and the stop is made to open a hole in a beaver dam that is threatening to inundate the road with water. (Another look the next morning showed that the break in the dike had been neatly repaired.) Foxes, otters, an occasional moose, bobcats, ducks, loons and black bears are common residents or visitors in the valley. We saw no bears on our visit but later had the fun of pursuing a beaver around Phillips Pond by rowboat.

Many prominent foresters have been guests at handsome Phillips Brook Lodge

Al Vohar—New Hampshire woodsman

you were gazing down on a short time before.

Main artery of travel into Phillips Brook forest is a fine logging road —a super highway or thoroughfare as logging roads go—that bisects the tract north and south from one end to the other. "Gravel and trees are the two most important things in the life of a forester," Strout comments with a grin and plenty of the former has been used on this highway which is hard-surfaced, broad enough for trucks to pass with plenty to spare, and with ample shoulders for piling. As your car heads due north and up one notes that this main thoroughfare is criss-crossed by dozens of narrower, lateral logging roads (see map) which feed the logs into the main artery. These lateral roads are bisected in turn by other logging spurs including the winter logging roads. Deeply-rutted and dotted by sizable stones, these winter roads appear anything but "road-like" in summer but in winter become passable when filled in with snow and frozen solid.

Efficient Road Net

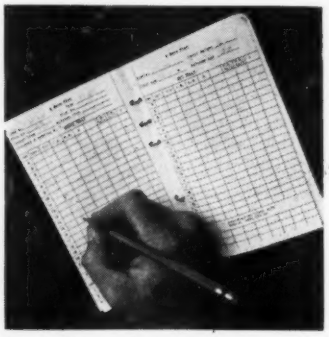
The road net and how it is laid out is the symbol of a going forestry good state of repair of the main "boulevard" is a guarantee that selection cutting is the watchword here with the loggers returning at regular cycles for another harvest under the principles of sustained yields. Annually, 5,000 cords of spruce and fir pulpwood and about one-and-a-half million board feet of maple and yellow birch are going out over this network — pulpwood for hundreds of paper products and hardwoods for construction, toys for children, wooden desks for schools, wooden wagons —many of the things that contribute to the welfare and comfort of our people.

With two lumber camps carrying on controlled cutting operations, wildlife abounds in this forest one quickly learns. Animals and birds alike are both curious and comparatively tame. A white-tailed deer surprised by the car on a curve gives a great leap to the roadside thicket but its rear end protruding in plain view indicates that a pair of black eyes are watching curiously from their cover. A porcupine by the roadside bristles his quiver of darts but does not otherwise bestir himself. Partridges are abundant. At one point a The beaver apparently enjoyed the game himself and on several occasions spanked the water with his tail, submerged, and reappeared a minute later at a point 40 feet away and travelling in an entirely different direction.

Thirty-five Percent—No More, No Less

Skirting Phillips Pond and handsome rows of white birches, visitors are now afforded their first glimpse of Phillips Brook's lodge, a two-story log cabin, that gleams in the sunlight due to the fact it is shellacked from top to bottom. Two birches growing at 30 degree angles from the same base present a big V on a velvety lawn that flows down to the lake front. This lodge is to be our headquarters for the next few days and Mr. and Mrs. Al Vohar, the former a woodsman of note and the latter a cook whose biscuits are unsurpassed, have the welcome mat out. While Mrs. Vohar puts the finishing culinary touches on a mess of lake trout caught that morning by Mr. Vohar, one takes a look at the lodge log and learns that this area has been visited by a number of famous foresters both from this country and

How to make trees grow faster—to widen the growth rings shown above—is a key aim in IP program



Recording of growth represents another phase of IP management in conducting "census" of trees

abroad. Col. William B. Greeley's bold scrawl stands out like John Hancock's on the Declaration of Independence and your hosts—including Superintendent Willard Ruch who has now joined the group—casually brings forth the Colonel's book "Forests and Men" in which he wrote of this forest as follows:

". . . I had tramped through some of these spruce and maple woods with Austin Cary, the forester from Maine, 45 years before. At that time planning for continuing supplies of pulpwood was just beginning. Now I found a paper company devoting an entire watershed of some 20,000 acres to experimental cuttings. Here it will determine the number of crop trees and cords which should be left standing to yield the greatest possible annual growth of the prized pulping woods—spruce and balsam fir.

"The baked beans and mince pies in the camp had the old flavor of the north woods," wrote Col. Greeley, a New Hampshire man himself. "But the painstaking felling and logging had no counterpart in any forest work I have seen in America or France. The marking of trees to be cut is an exact engineering job, calculated to take 35 percent of the softwood volume—no more no less. Measurements of the growth and windfall losses every five years, on this and other fellings left with different stocking, will give the company the facts it needs to grow a maximum timber crop in its northern woods."

Thirty-five percent — no more no less. Isn't that a rather arbitrary figure to seize on since the danger from windthrow and other factors is liable to vary in different compartments, you ask? In other words, won't it eventually prove necessary to cut only 20 percent in some plots and perhaps 45 in others depending on the "local" conditions? The foresters reply that this may prove to be the case as their inventory program is perfected but meanwhile they had to start somewhere and the present cutting system is based on a growth rate of three-and-a-half percent every 10 years—a figure that was arrived at after cruising prior to and after cutting in 1945. More recently, a machine (IBM) record system of taking IP inventories is being installed in New Hampshire and Maine sample plots as promoted by Cal Stott, a Forest Service specialist on perpetual forest inventories. If you think in terms of 12 checkerboards laid end to end with one square in each board labeled as a permanent sampling plot you will visualize what this Gallop Poll of Trees looks like as seen on IP lands. Each tree in the sampling plots is counted and data are taken down on its various characteristics. Once these data have been obtained on enough sample plots and fed into the machine many pertinent questions as regards the potential of the whole forest can be answered.

The Human Equation

The human equation enters into this 35 percent edict too, we were to learn later in tramping through the woods and visiting the camps. While Strout and his foresters are the key men as they carry on their marking operations that maintain the pattern, it also requires men like Ruch and Carlaw to see to it that this pattern is enforced. We were to hear Carlaw grimly laying down the law to the men in one camp to the effect that

(*Turn to page* 46)

Photos by William Vandivert, New York City

Forestry at Phillips Brook is not all outdoor work. Plans, maps and reports—paper work in other words—have a place

Clearly shown in photo are spikes which hold trapped insects

The Plant Fly-Trap

Nature has endowed the flytrap with a device as deadly to insects as a steel trap is to animals

By WELDON D. WOODSON

IN a letter dated January 24, 1760, Arthur Dobbs, Governor of the State of North Carolina, wrote: ". . . the great wonder of the vegetable kingdom . . . to this surprising plant I have given the name Fly-Trap Sensitive." In one of the many bogs of that state, he had just stumbled upon a truly amazing oddity of the vegetable kingdom. Now known as Venus's-flytrap (*Dionaea muscipula*), it is found in abundance in the eastern part of the Carolinas but nowhere else in the world. Equipped with a trap similar in appearance to that of a bear trap, but only in miniature, it captures flies and other small insects.

Since the governor's discovery nearly two centuries ago, numerous writers have featured it in newspapers, magazines and nature books as a botanical marvel. In fact, one book which includes it bears the title, "Marvels of Plant Life." Com-

mentaries on it range from these popular presentations to the work of Francis Ernest Lloyd, "The Carnivorous Plants," an authoritative, comprehensive treatment at technical level. Recently, the Moody Institute of Science, a department of Chicago's Moody Bible Institute, dramatized it in its motion picture, "The Prior Claim," some of the stills of which are used to illustrate this article. To get the pictures, members of the Institute's staff traveled from its headquarters in West Los Angeles to the home of the flytrap plant—North Carolina.

Venus's-flytrap is a small plant having a rosette of leaves from three to six inches in diameter. The extremity of each leaf modifies into a little two-lobed trap like "two upper eyelids joined at their bases," as M. A. Curtis described it in 1834. The traps, up to half an inch or more across, are formed by two dished lobes of a trapezoidal shape, hinged along one edge and armed with sharp spikes or teeth along the other edges. These ciliated edges of the two lobes mesh accurately like the fingers of two hands clasped together.

When in readiness for the catch, the two lobes are opened at an angle of from 40 to 50 degrees. On the inner surface of each lobe are three tiny trigger hairs, arranged in a triangular configuration. When a visiting insect touches these hairs, the trap snaps shut, locking the victim firmly within the prison house by the meshing of the spikes along the edges of the trap. The closure is a fast but partial one, and some time later the two halves of the trap clasp closely together and seal the doom of the insect prey within.

This specialized leaf is first a trap, and then a stomach, for the insect is soon covered with secretions which break down the body tissues so that the plant can assimilate them for its own use. After about ten days, the lobes of the trap separate and the dried chitinous remains of the vanquished insect fall out. The trap, now set for another catch, is fully capable of two or three such catches before it dies and gives way to other and more vigorous traps coming along.

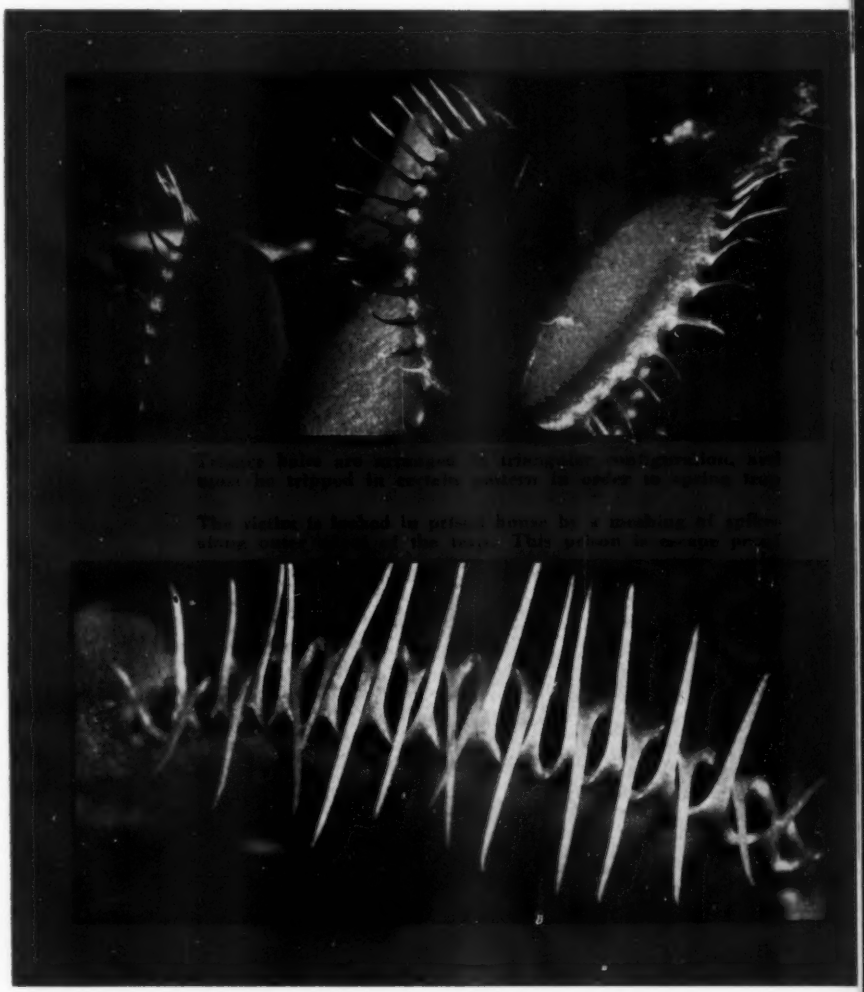
The trap is selective in its action. For example, if triggered by an insect, it stays closed until the captive is thoroughly digested, which may be ten or more days. On the other hand, if accidentally triggered by a leaf or twig, the trap will shut, but opens again much sooner as if sensing its mistake.

For further examination of the trap, the inner faces of the two lobes are rich in various types of glands. The alluring glands, restricted to a narrow band just within the ciliated edge of the lobes, are embedded in the surface of the trap and contain no pigment. When one views the about-to-be-trapped insect with a magnifying glass, he sees its mouth parts busy lapping up the sticky substance which, in addition to a good taste, must also have a pleasant aroma to account for the attraction of the trap for the insects.

In the central portion of the inner surface of each trap lobe are many other glands which, under the microscope, stand out prominently from the surface of the leaf. Their color, a deep red, gives that color to the central region of the inner surface of the trap. These glands secrete the digestive substance and also absorb the food from the insects.

There is a remarkable relationship between the arrangement of the alluring and digestive glands and the size of the insects caught. Insects too small to span the distance from the alluring glands to the red digestive glands most likely will not trip the trap. Studies of the catches show that the plant favors insects of a length around one-fourth of an inch.

In regard to the two lobes meshing together, thus entrapping the visitor, it has been concluded that the seat of the movement resides not within the wall of the lobes, but in the epidermis, the thin skinlike layer of cells covering the faces of the lobes. All of the movement takes place in the lobes, since there is no true hinge action. The region where one lobe joins the other, known as the midrib, lacks the articulation we see in a hinge.



As yet, there is no definite explanation as to the mechanism of the trap closure. Water movements from one group of cells to another have been suggested. To illustrate, water from cells along the inner surface flowing to cells along the outer face could cause the expansion of the one and contraction of the other with a resultant bending of the lobe. The changing of sugar to starch in the inner surfaces of the trap lobes has also been postulated, but chemical changes that work that rapidly—the closure of the trap can be accomplished in as little as one-half second—are not known. In some undiscovered way tensions build up which the triggering action of the sensitive hairs suddenly release.

In 1770, Ellis thought the three delicate hairs on each lobe of the trap impaled the insect as the trap closed. But in 1834, Curtis expressed his conviction that the hairs possess a sensitivity resident within themselves. Many contended the closure of the trap to be a periodic action without reference to such things as a triggering effect. The trap, believed to open at night, was supposed to snare any insects unfortunate enough to be inside at the moment of the closure. A number of experimental researchers demonstrated, however, that the closure positively ties in with the stimulation of the three minute hairs on each leaf of the trap.

Under microscopic examination, the trigger "hair" is revealed to be a slender cone about 1/16 inch high with a base diameter a tenth the height. The cone, supported on a short pedestal, has a ring of deeply grooved cells entirely around the base. As the hair is touched, it acts as a lever resulting in a great deformation of this groove.

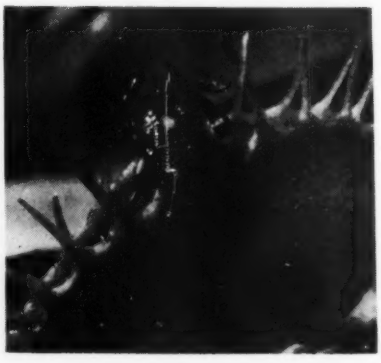
There is much more to the trigger action of the trap than the simple closure when a hair is touched. While the picture is complicated by a number of things, such as temperature and the physiological condition of the trap, it appears that a summation of stimuli is needed to trip the trap. One trigger hair touched twice or two hairs contacted once, each with a time interval between stimuli of from about one second to twenty seconds, is necessary for tripping. At least two stimuli are required at temperatures about 15 degrees centigrade. The sensitivity of the plant increases as the temperature increases, and only one stimulus may be needed at 40 degrees centigrade.

Obviously, the Venus's-flytrap tissue is not muscle tissue, but as long ago as 1873 it was known that actuating the trigger hairs caused electrical disturbances across the leaf of the trap. In 1950, Otto Stuhlman, Jr., and Edgar B. Darden of the Department of Physics of the University of North Carolina applied some of the modern neurological "know-how" to the study of the currents of the traps. By placing two special nonpolarizing electrodes on the underside of the trap, they recorded surges of electricity as trigger hairs were bent with a fine glass hook. In the space of 1/10 second, this electrical transient rose to its maximum value and then decayed, settling down in about 1.5 seconds.

No odor accompanies the digestion of the insects within the trap, indicating that bacterial action plays little or no part in their breakdown. Supporting this, when a piece of meat is placed partly within and partly outside the trap, putrefaction results on the portion outside, but not inside the trap. Inserting the rotted piece inside another trap causes the smell to disappear. Putting a bit of food within the trap and cutting it open after about two days shows the extent of the secretion, for drops of it ooze from the trap.

"If it were a problem to construct a plant with reference to entrapping insects," Curtis commented in 1834, "I cannot conceive of a form and organization better adapted to secure that end than are found in *Dionaea muscipula*." The scientific work of the last 121 years has served only to show that this is a most conservative statement.

Venus's-flytrap, shown here mingling with other plants in the bogs, grows in abundance in the eastern Carolinas but nowhere else in the world. Looks like miniature version of a bear trap



Right: This unfortunate beetle touched the hairs that triggered the trap, sealing his doom. Holding its victim firmly, the flytrap covers the insect with secretions to break down the body tissues in order to use them. In about 10 days the process is over

Working without tools or blue prints, beavers build dams for shelter and storage

WILDLIFE ENGINEER

Pound for pound, the beaver is the greatest dam builder in the world. A one-man construction company, he comes equipped with engineering equipment fore and aft

By EDMUND NILES

WHEN I was a boy, a long time ago, I watched some beavers build a dam in the pine woods of northern Wisconsin. Of course I didn't see them at work for they work only at nights and when they are not disturbed, but from time to time for a year or more I watched what they were doing. I was so intrigued with their clever work that I have made a study of the busy little fellows where ever I have been in the wilds where they have been found. I may be able to write something of interest that I have learned firsthand.

When North America was first settled beavers were plentiful in most of the northern sections. His fur was valuable, he was easy to trap and he was nearly wiped out; the survivors are now protected by game laws, and there are yet remaining many colonies of the little fur bearing workers in the North West states and Canada. A full grown beaver weighs about thirty or thirty five pounds. His front legs are short and strong; his hind feet are webbed and can push him through the water rapidly. His teeth are large and shaped like a chisel, the enamel or substance of the teeth renews itself as it is worn away by constant use. His tail is large, flat and covered with a tough leather like material. I never knew what use the beaver made of his tail other than to slap the water with it. An old Indian told me that when the beaver slapped his tail he was sending a message to the other beavers; the Indian insisted that the beaver used his tail in carrying mud and material for the dam; the theory was that the other beaver would "load him up." I wouldn't vouch for this legendary lore, but after seeing the work the beavers have done, I will believe almost anything. The beaver follows a set pattern and adopts a definite method of action, and when we know his way of life, his habits and handicaps we can readily understand the reasons.

He is constituted for a life in or near the water, his natural habitat is in the north, or other cold areas

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Sharp, chisel-like teeth of beavers can produce a "totem pole" such as above

OREGON FISHING — Paradise Diversified

With numerous streams and lakes, a 400-mile coastline, and a good highway system, Oregon is indeed the answer to an angler's dream

By LESLIE G. KENNON

Hard-fighting tuna attract anglers to deep seas off Oregon coast

FISHING in Oregon offers the angler as much diversity as can be found in any state in the nation, both in types of fish caught and places to catch 'em.

Although fishermen will find accommodations slightly higher in cost than many states, such as Kentucky, Tennessee, and the Ozarks region, they will find that the takes make up for the loss to the pocket book.

Another little known fact about Oregon fishing is that an increased highway system has made nearly all streams, lakes and coastal waters readily accessible, and several "new type" fish have showed up in abundance.

Oregon fishing is not limited to any season, either. In fact, coastal steelhead fishing is at its best in December and January.

Streams like the Nestucca, Wilson, Siletz, Siuslaw, and Rogue Rivers have their steelhead runs beginning

with the winter rains about November 15 and lasting until the latter part of March.

Spinning and casting rods are the most popular tools, with the drift method generally accepted as the best way to hook 'em.

Surf fishing has been taking a big jump in the Oregon angler's "ways and places to catch 'em" diary lately. One reason for this is the coastal highway which makes Oregon's 400-mile Pacific Ocean coastline readily accessible—plus the fact that it's all free!

In fact, bait itself is largely free. If the angler has a mind to, he may generally find enough worms, chunks of clam, and mussel along the beaches.

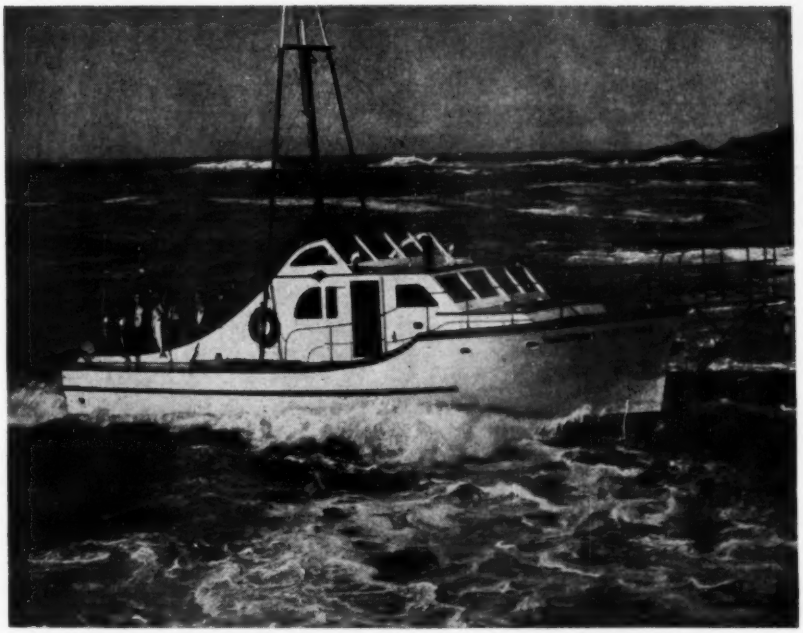
Surf fishing is a real thrill, too, particularly when done from rocky points along the coastal areas where the ocean thunders into chasms of the headlands.

Almost any type of tackle is used—but rather heavy rods, reels and lines are used when fishing the open surf so that sinker and bait can get out to where the big ones bite.

One of the newer type fishing draws in this picturesque state is angling for the hard-fighting tuna. This is a comparatively new sport for Oregon waters, because, while they have probably inhabited Oregon waters for some time, fishing for them actually has begun only in the past few years.

Big drawing card in Oregon—trout fishing

Arrangements can be made for tuna expeditions at Astoria, Depoe Bay, Newport, North Bend, Coos Bay and other points—but the fish are caught about 25 miles out. Best fishing is usually in late July for this giant of the deep, with trolled lures the more popular method.



Deep sea troller returning after a most successful expedition

Coastal salmon fishing is popular during the summer, with best runs at mouths of the rivers from March through June and again from August through October.

Anglers particularly enjoy the annual Astoria Salmon derby. This fabulous event is held for six days over the Labor Day weekend, and valuable prizes are given for the largest fish caught.

But trout fishing remains by and large the big Oregon drawing card for the fisherman. Such sportsmen as Wallace Berry, former president Herbert Hoover and movie comic Guy Kibbee have made Oregon a "must" on their "where to go for trout" list quite frequently.

The general open season for trout varies with each season, incidentally, and the Oregon state game commission prescribes different opening and closing dates for various localities and streams. So, it's a good idea to check with the place you intend to visit beforehand and see what the fishing conditions are in that particular area.

Steelhead and salmon are open the year round in most of the streams and bays.

You'll find streams galore in the coastal region of Oregon, with the Cutthroat trout the primary catch. The early runs of these fighters start upstream in March and April. Most of these trout you'll catch range from nine to 12 inches, with, of course, canned salmon eggs yielding the most fish early in the season.

Flies, with the Royal Coachman (about No. 10) the most popular, are used throughout the summer.

Excellent trout streams include Beaver Creek, the Clatskanie, Big Creek, Youngs River, and the Lewis and Clark River in the Astoria region.

The upper reaches and forks of the Willamette is another favorite spot.

But the Deschutes River is one of the most famous trout streams in the entire nation. It's a real trout fisherman's dream—a turbulent, eddying, surging stream. And it is distinctly a fly stream. It's at its best usually around July with fall takes generally from September 1 to the end of the season.

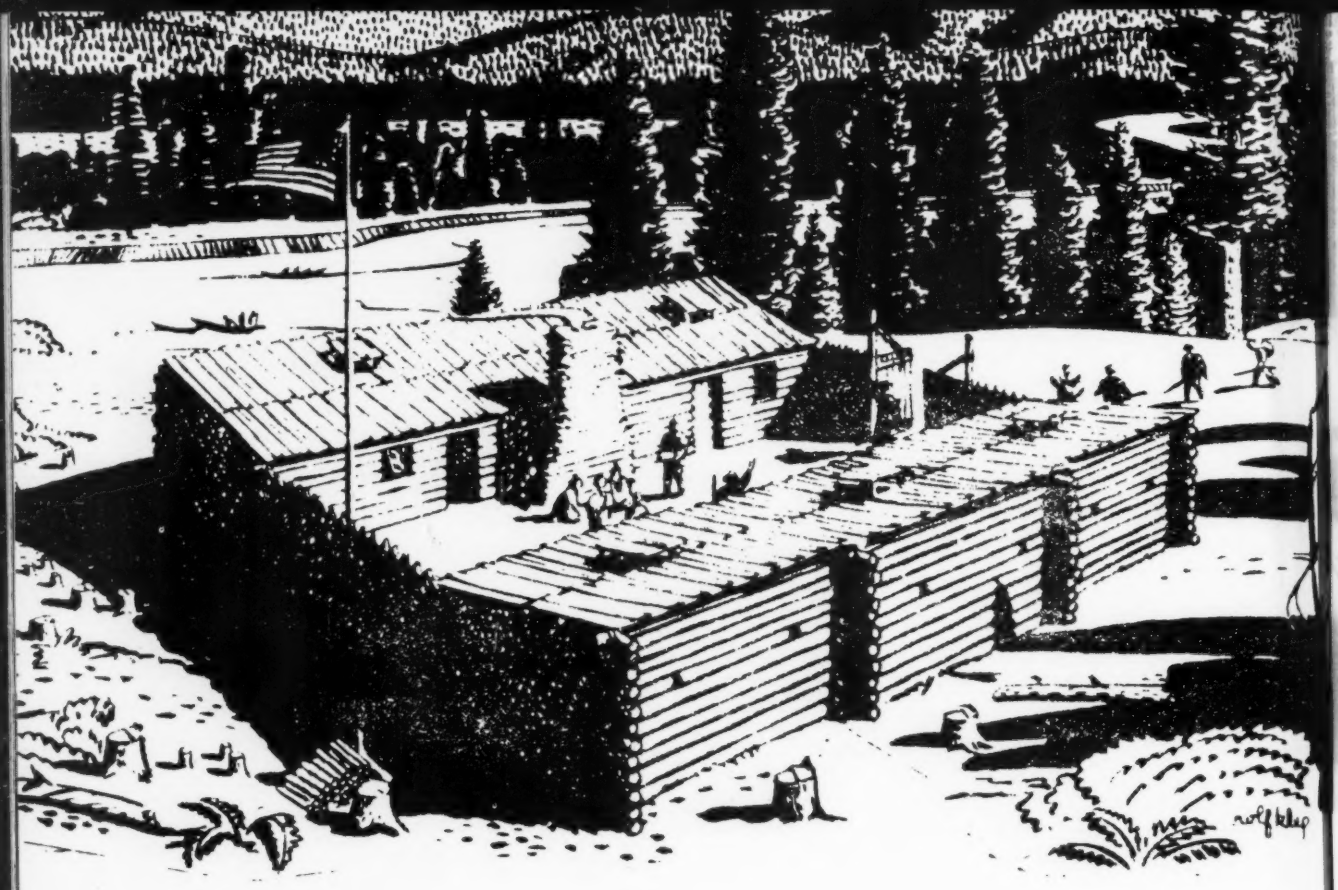
Good Rainbow trout fishing is available on the north fork of the Malheur river—especially early in the season.

Some of the biggest Rainbow (ranging from 10 to 15 pounds) are taken from the upper Klamath Lake, where fishing is best early in the season.

But anglers planning a trip to Oregon should not limit themselves to trout. Indeed, Oregon is a diversified fishing paradise.

For example, striped bass, ranging from two to 60 pounds, are caught on wobblers, plugs and bait in the Coos Bay region, with best runs from late May until October.

(*Turn to page* 59)



Restoration of Fort Clatsop

Restoration of Fort Clatsop at the mouth of the Columbia will highlight the Lewis and Clark Sesquicentennial in the Northwest this month. Logs for the fort are from an Oregon tree farm

By STEWART HOLBROOK

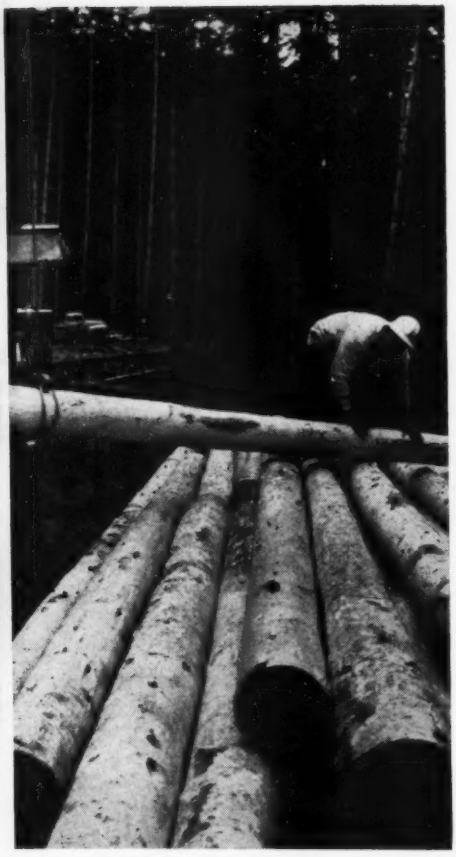
IT was the 16th of October, 1805, when Captain William Clark and Lieutenant Merriwether Lewis, together with their party, first laid eyes on the big stream that had been flowing in and out of men's imaginations for more than a century. It was November when they entered in their journal the exultant notation: "Ocian in view. O! the joy!" *This was it.* They were looking fair on the Great South Sea. The waves were coming in from China.

They proceeded to whack up seven cabins and a stockade and named the place Fort Clatsop from the local tribe. Christmas here by the shore of the Great South Sea was pretty bleak. It rained, it blew. The cabins smoked terribly. The blankets were wet and acrawl with fleas. All hands who wanted it got a little tobacco, but there were no ardent spirits and the holiday feast consisted of "pore elk, so much Spoiled that we eate it thro' mear necessity."

Late in March the explorers posted notices in Fort Clatsop that their overland journey to the sea had been completed. They distributed Certificates of Kindness among the natives. Then they pushed off and started back up the Columbia. Six months later they were back at the edge of the frontier, in St. Louis, where they were "met by all the village and received a harty welcome from its inhabitants."

The welcome was deserved. These were conscientious men who had carried out in smallest detail the instructions of their good friend, Thomas Jefferson, who wanted to know everything possible concerning the great void beyond the Mississippi. Their botanical and zoological notes described many new species, or notable variations; and a good number of their anthropological observations turned out to have permanent importance.

For a century and a half historians have been assessing and reassessing the importance of Lewis and Clark.



Peeled Logs for Fort Clatsop were provided by Columbia Tree Farm of the Crown-Zellerbach Corporation

Once cut and peeled, logs were delivered to Astoria hangar where two Finnish foresters notched them and put the fort together. Then it was taken down again and logs were taken to Wauna for chemical treatment. Final step will be erection of the fort on the site of old Fort Clatsop

Some have seemed inclined to credit their journey alone for acquisition by the United States of the vague region known as the Oregon Country; and to minimize the efforts of other Americans who came before and after. Yet the two land captains need not be cut down to make room for others. They notably bolstered the previous claim established by Captain Robert Gray, also an American, in his *Columbia*.

Though the Louisiana Purchase was made before the explorers actually began their journey, which Jefferson pretended was a mere scientific expedition, nobody knew just what areas lay within the Purchase. Even the Continental Divide was still virtually a hypothetical conception. The borders of Spanish California were undefined. And where lay Canada? Into this mysterious land came the Lewis and Clark party.

It is impossible to slice history into neat portions that will permit us

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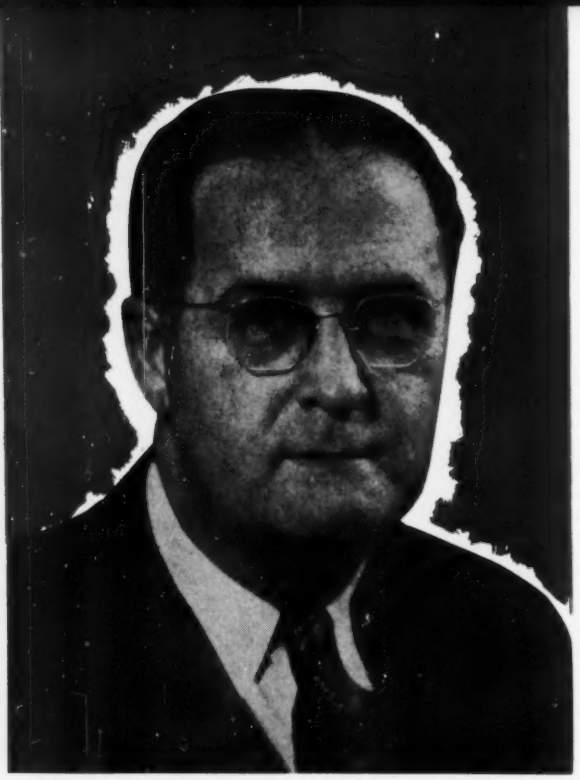
Fort restoration, modern style, would have amazed Lewis and Clark. The logs were handled like babies. Each log was individually handled by cable sling rather than tongs to prevent damage. Loggers who assisted in loading wore leather soled shoes instead of calks. An extra long trailer truck to handle logs up to 40 feet in length was required for the transport job. All logs were chemically treated in a vacuum pressure system.



Senator Clinton P. Anderson, of New Mexico

PLUGGING THE GAP

There's a lesson to be learned in enactment of recent amendments to the mining laws, this Senator believes. It shows what cooperation and planning can achieve for resources development

WHEN The American Forestry Association in 1954 urged that Congress revise the federal mining laws to prevent their abuse by claimants using their claims for purposes other than mining, there were those who said it could not be done. Too wide a gap—in some cases actual mistrust—existed between the mining industry and the government bureaus, some believed. In addition, there was the difficulty of achieving any useful public lands legislation that did not have at least the partial blessing of all the various users of these lands—the miners, timbermen, grazers and recreationists. The Forest Service itself, which has long considered mining law abuses its number one management problem on national forests, at times almost despaired of ever achieving any concrete amendments that would facilitate and simplify proper management of these elusive claims that were blocking access to timber, water and other resources. As of this year these claims were being filed at the rate of 167 a day.

Certainly the situation looked anything but hopeful in January of this year. Then suddenly, the tide turned. Last month had seen both Houses of Congress passing companion bills to amend the mining laws and which should go a long way in eradicating the illegitimate claims racket once and for all. While fully protecting the rights of legitimate miners, these bills gave the government bureaus the right to manage the surface resources of these claims prior to patent. At the same time they set up an ingenious ad rem procedure that will enable the bureaus to wash out all illegitimate claims quickly and at relatively low cost as compared with previous search and sue methods. In the House, Rep. Rogers' bill (HR 5891) had comparatively smooth sailing. In the Senate, however, Senator Clinton P. Anderson's (S. 1713) ran into obstructionist tactics on the part of Senator George W. Malone, of Nevada.

Senator Malone was flatly opposed to any amendments to the mining laws. Present abuses could be easily cleared up if the government bureaus would simply do their jobs, he said. Validity of witnesses who had not been engaged in actual mining operation were questioned by Senator Malone at the hearing conducted before the Senate Committee on Interior and Insular Affairs under Senator Anderson's chairmanship. Witnesses who admitted to having lived in Washington for more than three months without returning to their heaths to "get their feet on the ground" were also regarded with a wary eye by the Senator from Nevada.

Despite Senator Malone's opposition to the bill right up to the final vote, Senator Anderson, a former Secretary of Agriculture, carried his bill down the field for a touchdown. It was Senator Anderson who persuaded Senator Lyndon B. Johnson, Democratic party leader, to present the measure for Senate consideration. Running solid interference for him from the other side of the aisle was Senator Frank A. Barrett, of Wyoming—the same Rancher Barrett who figured prominently in the so-called "Wild West" grazing hearings of a few years ago.

When Senator Malone, at the last moment, endeavored to amend S. 1713 by having it apply only to national forests, Senator Barrett stoutly declared, "Mr. President, I am opposed to the Senator's amendment. The purpose of his amendment is to make the bill effective only as to lands in the forest reserves and leave the public domain lands in their present status. We are having a rush of uranium mining claim filings in our state (Wyoming) at this time. We need this bill to protect those people who presently have acquired the right to these public lands for grazing and other purposes. Under the Senator's amendment a

(*Turn to page* 56)

AFA's "Burnin' Bill" was the hardest-hitting fire prevention film ever made. It was shown at every southern crossroads. That's the production crew above. The author is the second from left

The Southland Revisited

It started with AFA's "Dixie Crusaders" of 30 years ago. Now AFA brings southern forestry progress up to date in a new three-part study about an industrial revolution with roots

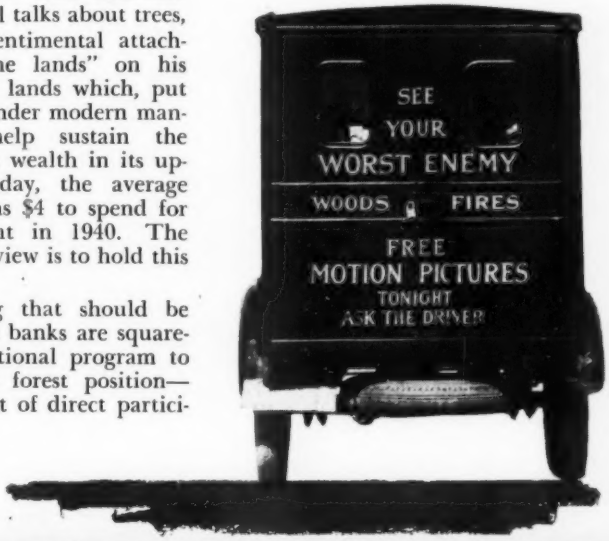
By ERLE KAUFFMAN

PART I

"THE first thing to understand about the South's economic revival is that, if you take the long view, it is just beginning." This appraisal was made in the plush inner sanctum of Atlanta's Fulton National Bank, and the speaker was Erle Cocke, Sr., chairman of the board. It came in response to a question as to how far the region's present industrial upsurge might carry. Having emerged from worn out cotton fields and desolate, cutover and burned out woodlands in one of the most spectacular economic revolutions since the era of the railroads, a new South stands ready, from all outward signs, to be transformed into an industrial empire of vast proportions.

"The second thing to understand is that rate of progress will in large measure depend upon what we do with our pine lands." This, too, was a banker's estimate. And when the astute and energetic board chairman of Fulton National talks about trees, it is not from sentimental attachments. The "pine lands" on his horizon are those lands which, put to intensive use under modern management, will help sustain the South's per capita wealth in its upward climb. Today, the average Georgia family has $4 to spend for every dollar spent in 1940. The banking point of view is to hold this trend.

"Another thing that should be known is that the banks are squarely behind any rational program to better the state's forest position—even to the extent of direct participation, as in the case of our own Pinetree Program." The Fulton National's program was developed in 1950 to rally the banks of rural



Georgia to the support of a tree planting program which over the years would add two and a half *billion* pines to the state's timber wealth. The country bankers not only rallied but rallied so enthusiastically that 251 banks purchased tree planting machines for the free and ready use of farmers and other landowners.

An endorsement of this magnitude at the banking level of community life is the kind of realistic yardstick most people understand. As such, it is a heartening and revealing answer to the question of how southern forests and southern forestry are faring as the tides of industrialization rise throughout the vast region between the Rio Grande and the Potomac.

It is testimony that the banking leadership, like the industrial leadership, no longer looks past the trees to the cotton fields and the cowpastures. It is acknowledgment at the higher levels of economic life that the South's great industrial upswing is being sparked in important part by equally great if less spectacular advances in forest practices and policies—that wood and industry are marching up the road of progress together, each dependent upon the other.

It reflects how much the pattern of southern life is being cut by the blade of a changing forest economy. In a land where a generation back lumber giants mourned at the bier of the piney woods, today men who think and talk in terms of wood fiber look out upon the nation's greatest forest frontier—upon what very likely is the most valuable wood producing plant in the world. Where woods burning as a form of agricultural expediency was the accepted custom, tree farming today has become big business—and good business.

There are, of course, other and equally significant signs on the horizon that tell the story of the phenomenal gains forestry has scored in the South over the past quarter century—not the least of which are healthy payrolls, satisfied stockholders and customers with greatly increased buying power. In 1929, roughly $11 out of every $100 of national income were going into southern pockets; today this has jumped to almost $15, a rate of increase in per capita income considerably above the national average.

An investment of better than a billion and a half dollars in southern pulp and paper plants is a towering example of what is happening. So is the fact that southern production of forest materials outranks that of any other section of the country. No other region can show so large a corps of professional foresters at work. And for an area that was slow to take up forestry as a state function—the slowest, in truth, of all the great forest regions—much can be read in the fact that in 1954 ten of the twelve states generally classified as "southern," supported state forestry expenditures in excess of a million dollars. Only eleven other states in the entire country reported annual spending at this level.

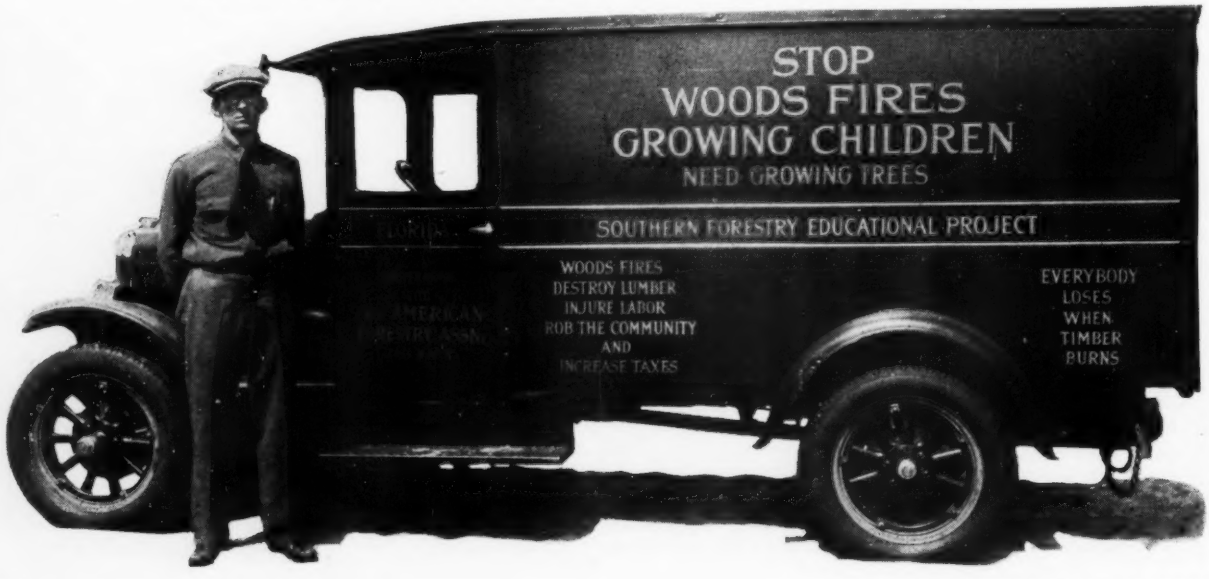
The emergence, after years of intensive logging, grazing and indiscriminate burning of a new and flourishing forest vastly superior in importance to the region than the original southern timberlands is a fascinating and full-bodied story. It is a story that in time will stand as a monument to the American system of free enterprise working hand in hand with government and its institutions. But most of all it is a monument to a great forest that refused to be destroyed, and to the ability of a family of trees—the southern pines—to replenish itself not once, but again and again.

To anyone who has listened to the heartbeat of southern forestry over the years, all this must sound like the trumpeting of a Green Angel announcing a golden milestone. To those first missionaries who in decades past roamed the southern timberlands preaching a simple course in pine tree values and management, it would doubtless loom as a major miracle come to pass. But it is not a miracle—and it is more than a milestone, when you examine it closely. The vital juices that fuel the forestry movement in the new South are the juices that were fermented in a crusade that began a generation ago.

It was—and is—the crusade for an

Stop Woods Fires!

The man who gave the "Dixie Crusader" project muscle was the leader of the mobile unit. This is the Florida truck. The service these men gave will not be forgotten



enlightened and informed people in the management of their forest resources.

A crusade of education, it moved from the missionary stage to an organized, concentrated force in 1928 when The American Forestry Association, breaking with precedent, launched its historic Southern Forestry Educational Project. It picked up momentum under the stimulus and guidance of state and federal agencies in the New Deal 1930's, to become the vast well geared and well financed educational machine it is today when the forest industries became a valued partner.

This series of articles will retrace the path of this crusade, looking in on its major contributions to the dynamic story forestry is writing in the South's fabulous march back to riches. At the same time it will probe the force of the tide of industrialization that is rolling over the region as measured by the depth and quality of the human and natural resources from which it musters its strength and energy. And it will attempt to shed light on the shape of things to come as industrialization swings into full stride and the demand for forest products, especially wood fiber, begins to pressure.

That it will pressure, no one questions. After traveling the dark and troubled road from one of the world's wealthiest regions to an agrarian economy that failed to give its people economic equality with their neighbors to the north and west, the South is marching back over a highway paved with the gold of commerce and industry—industry that must be sustained in important part by the resources of forest and field.

Warren T. White, assistant vice president of the Seaboard Air Line Railroad, has termed the South's dramatic story one of "from riches to rags and back to riches again."

In a recent address before the Harvard University Conference on Careers, he traced southern economy from a pre-Civil War per capita wealth, which was considerably above the national average, through the shambles of post-war desolation, in which all wealth had been destroyed, up to the beginnings of industrial development after the turn of the century.

"In 1910," he disclosed, "the total value of manufacturers in the South was three billion dollars a year. Today it runs to $56 billion. A region which fifty years ago was predominantly agricultural, has been transformed into one of the fastest growing industrial regions in America."

The economic indices tell a dramatic story of this growth. Measured in terms of income to the people, manufacturing now ranks above agriculture. Wages and salaries paid by manufacturing establishments exceed the combined new income of farm owners and operators and wages of farm workers by thirty percent. In fact, the amount of money paid out in wages by manufacturing in the South now tops that of the whole of New England. Again using wages and salaries as a yardstick, construction in the South has increased 320 percent over the past two decades, as compared with 130 percent for the nation as a whole; in the communication field, the increase has been 290 percent, with 190 for the nation; power and gas industries are up 275 percent, as compared with 150 for the nation; mining has increased 180 percent, 80 for the nation; in finance and insurance the increase is 150 percent, exactly double the national average.

A mild climate, proximity to large and growing markets, adequate transportation facilities, favorable taxation, cheap fuel and power—these are magnets that attract industrial plants. But all are secondary to the region's natural resources and opportunities for their development—iron ore, coal and petroleum, a good water supply, fertile fields and what may well be the greatest commercial forest on earth.

Although manufacturing has uncrowned agriculture in the economic scheme of things, modern agriculture in the South is performing miracles—and more than one third of the region's population still live on farms, in contrast to less than a fifth for the nation. Average per acre yield of cotton has doubled—the yield of tobacco is up 70 percent, corn 30 percent. But the miracles do not stop in the cotton fields or the corn rows any more than they

Stop Woods Fires!

Negro audiences proved very responsive to forest fire prevention education 30 years ago. A humorous sequence in "Burnin' Bill" draws chuckles from this attentive group

do on the production lines of new aircraft and automobile plants.

Big city banker Erle Cocke and his country counterparts are well aware that in their own state farm income over the past decade and a half is up 369 percent—that under the new and more diversified agriculture that has come to Georgia, the $140 million value placed on the cotton crop in 1953 was 25 percent *under* income from livestock.

But at the same time, resource balance sheets tell them that the value of lumber, pulpwood and paper and naval stores in 1953 was four times the value of the cotton crop and twice the value of cotton and livestock combined. Production of pulp and paper products over this period increased 225 percent—or 135 percent over the national average. Lumber, up 113 percent but under the national average, was still large enough to establish Georgia as the leading lumber producing state in the South—fourth in the nation.

And in view of their Pinetree Program, it is certain the bankers have not overlooked the fact that for every Georgia acre in harvested crops there are two in forests—and that this ratio is changing every year in favor of the timberlands as more and more areas of low-production and submarginal areas for agriculture are put to tree crops, a process that is currently based on an annual planting of better than 100 million trees.

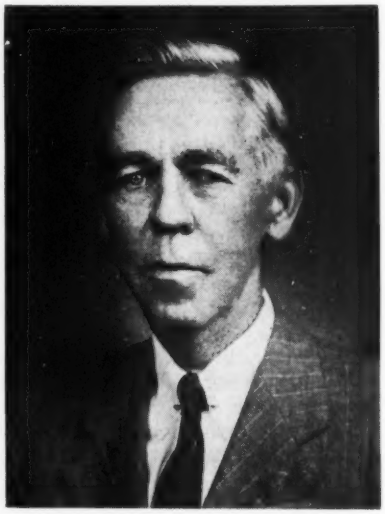
The U. S. Forest Service estimates that forest areas in the southern states have increased by six percent over the past fifteen years.

Georgia's forest industry is, of course, already one of its great towers of strength—an economic fact of life that applies to all of the southern states in varying degree. In pressing for more trees, the bankers of the state merely reflect the conviction of many economists and industrialists that emergence of the southern pines to their present stature economically is but a portent of things to come. If the South's new and lengthening economy is to hold under the weight of mounting populations, the day is not far distant, they reason, when timber growers and producers will be called upon to meet an industrial demand of two trees for every one that is harvested today—and after that three trees, in time perhaps four.

The banking point of view is direct and realistic—when that time comes, let's make sure the trees are there to be harvested!

Here, in essence, is the new spirit of southern forestry. Make sure the trees are there! It is reflected on main street and at the crossroads alike—in accelerated appropriations, budgets and programs for better protection from forest fire, for more expansive tree planting, for management practices more in keeping with the region's new economic position.

It stands out boldly on almost every forestry horizon. During 1954 two states for the first time on record planted 100,000 acres or more to trees. They were the southern states of Georgia and Florida. Louisiana and Mississippi each recorded a planting of better than 65,000 acres, South Carolina 43,000. Only Pennsylvania of all the remaining states in the nation planted as much as



Ovid Butler, AFA director, proposed, and executed, the first major education project in South

40,000 acres. South-wide, the 1954 planting record was 503,000 acres—65 percent of the national total.

You see it in the tree farm movement—in the record of 21 million acres of southern woodland in tree farms. This is 61 percent of the national total.

It is evident in the establishment early this year of the Southern Institute of Forest Genetics at Gulfport, Mississippi, and the major efforts being made by state forestry departments to further forest tree improvement programs. It is found in the interstate forest fire compacts set up for maximum cooperation among states in the continuing war against waste by fire; in the writing, early in 1955, of the first forest fire insurance in the South. It is seen in the increasing number of states establishing special committees to study the growing menace of forest insects and diseases, and to prescribe for ways and means to control or eradicate infestations. You see it in the endless carloads of pulpwood moving over the region's railroad network to the busy mills; and you see it in the streams of manufactured products flowing out from the mills to the markets of the world—paper bags, newsprint, paperboard, products in wide variety that source from wood fiber.

T. W. Earle, president of Gair Woodlands Corporation of Savannah, Georgia, and as close to the timber situation in the South as anyone, looks the future squarely in the eye with the prediction that the southern pulp and paper industry "is still in its infancy." Despite its present billion and a half dollar investment, he sees the industry's capacity doubling in "the next twenty years." This means that in two decades industry in the South will demand 30 million cords of pulpwood *annually*—which is five million cords more than was consumed by industry in the entire nation during 1952.

Henry J. Malsberger, general manager of the Southern Pulpwood Conservation Association, also predicts a 100 percent increase. "The industry" he says, "converted 16 million cords of pulpwood into products useful to mankind in 1953, and it is expected that 30 million cords will be requested to meet the demand in 1975."

How realistic are these estimates? The much-quoted 1954 report of the Stanford Research Institute on "America's Demand for Wood," an exhaustive study financed by the Weyerhaeuser Timber Company, sees 1975 requirements for southern pulpwood at 30 million cords—47 million for the nation. And as an indication of the trend, the U. S. Department of Commerce reports that in the 10-year period from 1945, pulpwood consumption in the South increased 108 percent, as compared with the national average of only 73 percent.

Lumber production is under the national average and estimates are that sawmill output will hold at its present level for at least a decade, with trends thereafter unpredictable. However, the fact remains that southern woodlands will continue to provide 40 percent of the country's lumber requirements.

The rayon industry, which is fast becoming an industrial giant, at present has plant investments in the South running into the hundreds of

Shooting "Burnin' Bill" on location. Like the better movies of 30 years ago, the theme was simple but it packed a wallop. That's Director Erle Kauffman on the left

millions of dollars. Seaboard Railroad's Warren T. White believes "the country must look to the South for the bulk of its future requirements of this important commodity," pointing out that 90 percent of rayon production is derived from wood cellulose, and that the South is rapidly becoming the center of the wood cellulose industry.

Like banker Erle Cocke and other forward looking southern leaders, Mr. White is of the opinion that "the potential for future development in the South is greater than anything we have witnessed in the past." One very good reason for this, he points out, is that with one third of the nation's population, the South still produces only one fifth of its manufactures.

Only the future, of course, will prove or disprove these forecasts. But one thing seems eminently clear: there is great force to the industrial tide that is moving across the length and breadth of the southern states—and that this force, to a surprising degree, is fueled by the region's vast and growing timberlands. Lumber, naval stores, cellulose from pulpwood—all are vital components of the industrial giant that is stirring in a land where timber resources a generation back were written off with a single word: "Exhausted."

Stanley F. Horn, editor of the *Southern Lumberman,* relates in his *The Southern Pine Story* that the "inexhaustible" forests of pine which Captain John Smith viewed at Jamestown in 1608 with awe and admiration, and through which DeSoto before him had wandered so many hundreds of miles, remained "an entirely unused asset during the earlier years of our national life." It was not until "the pineries of the Northeast and the Lake States had been virtually exhausted that the eyes of the large-scale lumber operators turned to the South; and it was in the latter decades of the Nineteenth Century that the commercial development of the southern pine timber began on a big scale."

What happened after that, in an era of crude logging methods and uncontrolled fires which, writes Mr. Horn, swept through the cutover lands "scorching and killing the young growth and the young seedlings," is eloquently expressed in these words: "The early operators moved on and there was a general tendency to assume that the South's timber resources were exhausted and to write off the region as a future source of lumber supply."

The limitless forest that met the eyes of Captain John Smith is no more, of course, but close to half the total land area of the southern states is still covered with trees. How this adds up statistically will be presented later in this series, but Mr. Horn has estimated that since colonial days nearly a trillion feet of pine lumber have been harvested from the southern timberlands. How much cypress and bottomland hardwoods is not known, but both felt the impact of ax and saw in only lesser degree. The pressure for building materials for a rapidly growing nation was heavy and constant—and military needs for World War I quickened the pace.

Despite this, and an annual harvest in recent years to account for 40 percent of the nation's total lumber production, there still remains standing a forest so vast and so rich in potentials that no less an authority than I. F. Eldredge, former director of the Forest Survey of the South with headquarters at New Orleans, has stated that it needs only reasonably intelligent management to yield as much timber out of yearly growth as ever came out of the primeval stands during a twelve-month period.

Fortunately for the South and for the nation, there were men who could foresee this—men who understood the characteristics of the southern forest and a climate favorable to rapid growth. They were the missionaries who broke ground during the somber twilight of lumbering's fabulous era, small voices in a world of big timber and big timbermen. Men like the incredible Austin Cary, the Maine scholar and logging engineer who became a circuit rider for forestry; like Henry E. Hardtner, the Louisiana lumberman who in the midst of wood plenty had the courage and foresight to stake his future in second growth timber; or like the kindly Wilbur R. Mattoon, of the U. S. Forest Service, one of the first to direct his missionary work to farmers and other small landowners.

The quiet counsel and sage prophecies of W. W. Ashe, another Forest Service groundbreaker, contributed immeasurably to forestry's early gains in the upper South; and Dr. Charles H. Herty, the great sci-

entist and supersalesman, left the chemistry department of the University of North Carolina to apply his genius to the southern pines. It was his promotion combined with the research of the U. S. Forest Products Laboratory at Madison, Wisc. which contributed so much to the growth of the pulp and paper industry in the South.

There were many others, of course —men like Posey N. Howell in Mississippi, Horace L. Tilghman in South Carolina, Bonnell Stone in Georgia, Russell W. Bennett and W. L. Barnett in Florida, Goodrich Jones of Texas—all dedicated to the then seemingly impossible task of strengthening or restoring forest economy through education and organized action at the local level.

"Stop Woods Fires" a unit leader tells little Bob McCormick and W. C. McCormick in this scene from the AFA film "Pardners"

Their progress was slow. For one thing, the political traditions of the people, as well as their economic attitudes, provided an unfavorable climate for centralized authority. Then most of the states, despite the boom period of big timber, were financially cramped. Furthermore, there was virtually no realization among the people of the damage caused by fires in the open growing southern pine stands—in fact, in the predominantly agricultural South, fire was a tool to be used against the forest.

As the seasons passed, however, and the large sawmills began to fold their tents and move out leaving many areas too barren and desolate for even the growth magic of the South to restore, people began to wonder. They wondered more in the shadows of bankrupt communities, serious tax problems and great stretches of unproductive land.

In the meantime, an entirely new set of conditions was evolving. For instance, the pattern of forest land ownership shifted from large holdings to thousands of small owners. One-mule farmers plowed under pine seedlings for cotton and corn and burned diligently to green up the forest floor for free-ranging cattle. And the small sawmill industry was born. Some idea of the problem this was to create can be found in the fact that during World War II a good 90 percent of the 17,000 sawmills operating in southern woodlands were producing less than five million board feet of lumber a year —about a week's run for any of the big mills.

Under these pressures and stimulated by a rising tide of conservation nationally, state legislatures by the mid-1920s had recognized forestry as a responsibility of the state and enacted laws defining this responsibility and creating agencies to implement them. Thus forestry at the state level was on its way, in swaddling clothes to be sure, but on its way nevertheless.

There were signs, too, of interest among lumbermen in the idea of permanence for their operations, such as Henry E. Hardtner was achieving with fire protection and reforestation at Urania, Louisiana. For example, A. Conger Goodyear, president of the Great Southern Lumber Company at Bogalusa, Louisiana, authorized what was to be known as "the great tree planting experiment"—massive handplanting on cutover lands. Later on, when he became chairman of the board of Great Southern's successor, the Gaylord Container Corporation, Mr. Goodyear was to witness the harvesting of these plantations.

But in general, the southern movement was anemic, cautious and uninspired, plagued by a custom that had the weight of generations behind it—the custom of burning the woods annually. Based on ignorance of forest growth and values, this custom more than anything else was the great barrier to forest regeneration and permanent forest management over the millions of acres of southern timber lands. Then, as now, the South's forestry problem was shaping up as primarily a human problem.

What was needed—and with a high degree of urgency—was some medium with enough force and drama to arouse the southern people, particularly the small landowners, to the fallacy as well as to the hazards of indiscriminate annual burning. But more than this—to give them understanding of the great economic and social opportunities awaiting them in the young forest that was beginning to blanket the region.

The first sign that such a medium might be in sight came in 1925 when Ovid Butler, then executive secretary of The American Forestry Association, proposed that an intensive program of education be undertaken in the South—a program designed to strike right at the heart of the woods burning problem by carrying it into the schools, the churches and the homes of the rural people. He proposed that this be done by a mobile corps of inspired young foresters, southern born and southern educated, utilizing to the fullest the dramatic appeal of motion pictures, exhibits and demonstrations. Furthermore, he proposed that this undertaking be financed by funds raised by the Association—in effect, a citizen's crusade.

Out of this vision was born the Southern Forestry Educational Project and Dixie Crusaders, which the Association – after raising nearly

$200,000—launched in 1928 in cooperation with the states of Georgia, Florida, Mississippi and South Carolina—an educational mission which still stands as the most intensive and concentrated in the annals of forest fire prevention—perhaps in the history of forestry, in fact. Equipped with a fleet of International trucks specially designed for the task, this mobile corps of young foresters—lecturers—educators in three years of ceaseless campaigning not only succeeded in focusing national attention on the woods burning custom and fire protection in general, but gave a dramatic demonstration of the value of intensive localized education as a means of permanently safeguarding natural resources.

For three years, from 1928 through 1931, this pioneering team of young men, many of whom went on to become leaders in southern forestry, turned in a performance that even by present-day specialization standards, stands alone.

No school was too small or too remote for the Dixie Crusaders to seek out; no road was too rutty or muddy for the trucks to travel. Day in and day out, rain or shine, often from sunrise to midnight, the men of the Southern Project were on the job lecturing, showing motion pictures, setting up exhibits and demonstrations in high school auditoriums and in one-room crossroads schools, before women's clubs, in 4-H club encampments, at remote sawmills, in turpentine camps. By the end of 1931, every rural school in the four states had been visited one or more times—and in each the seeds of forest appreciation were planted to take root.

Actually, during this period, the Dixie Crusaders traveled more than 300,000 miles through the piney woods back country broadcasting, with all the drama of the day, such themes as "Stop Woods Fire!"—"Everybody Loses When Timber Burns!"—"Growing Children Need Growing Trees!" They gave programs at 10,000 schools and hundreds of churches and other places rural people gather.

Equally as important to forestry education, they blazed trail almost from the beginning, creating new techniques while developing or discarding the old. Indeed, the whole concept was new. The U. S. Forest Service had experimented in a small way with this type of motorized crusading among the mountain people of Arkansas, but for an operation of this scale and tempo the men of the Southern Project merely tore up the book and started from scratch. Out of this starting was cut the pattern, particularly in visual education, that formed the framework of present day efforts.

For example, when audience reaction told them that motion pictures then available for forestry education were not getting over to the backwoods people, they tossed them out and produced their own—two full-length pictures of high dramatic quality, made in the piney woods amid scenes and people and incidents familiar to piney woods folk. These two films, *Pardners* and *Burnin' Bill,* not only were viewed by millions of southerners, but they just about revolutionized the art of visual education in forestry, setting the pattern for films that followed.

Another pioneering touch was the Project's special exhibit truck, developed in collaboration with the Florida Forest Service. Equipped with novel electrical displays as well as motion pictures, loud speakers and other attention getting devices, it created such a sensation in the South that it eventually was routed on a special mission throughout the East, Middle West and the Lake States, with a special performance on the Capitol Plaza in Washington, D. C., for the benefit of the members of the Congress of the United States.

The full measure of results of the Southern Forestry Educational Project, or the weight of its influence in shaping the course of southern forestry, might never be truly known. At the end of 1931, when the Project was dissolved, though the cooperating states continued to operate the units on a modified basis, the nation was at grips with the depression, with millions condemned to idleness. The following year, Franklin D. Roosevelt, in accepting the Democratic nomination for President, projected the idea of a mammoth public works program of forest and land restoration—a program that became a reality in the Civilian Conservation Corps just seventeen days after his inauguration in March of 1933.

Almost overnight, several hundred thousand young men were assigned the task of rebuilding depleted resources, thus dramatizing the problems of forestry in a way that had never before been possible. More than that, the states, suddenly faced with the responsibility of providing work projects for the Corps, looked anew at their program and timetable, moving up the calendar on those items best suited for the maximum expenditure of manpower. As a result, there was great concentration on fire protection and tree planting—activities tailored to the southern woodlands.

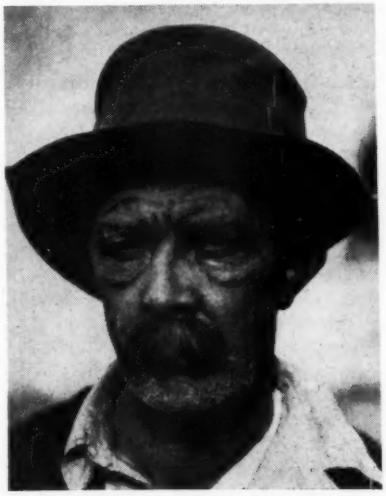
Thus southern forestry, showing signs of becoming robust after the tonic of the Southern Project, suddenly found itself having to develop real muscles to channel the stream of men and dollars flowing in from every point of the compass. That it was able to do this, that it could meet on such short notice the great and sudden impact of the CCC, was due in no small measure to the fact that southern attitude had been well conditioned for such an emergency by the Dixie Crusaders.

Nevertheless, from 1933 on it became increasingly difficult to separate the spheres of influence of the Southern Project and the Civilian Conservation Corps. And by the time the first guns of World War II were booming and a war economy was fingering out over the nation, southern forestry had reached maturity and was showing signs of becoming great.

W. C. McCormick, dynamic and able director of the Project, could not, of course, foresee the emergencies of depression and war that were to drastically alter the normal course of events. Thus in his final report he took the long view in appraising Project accomplishments.

"The real test of its success," he said, "must be judged in years to come by the permanent change in public sentiment and attitude to-

W. C. McCormick as the fisherman in the film "Pardners" produced by AFA Southern Education Project



STOP WOODS FIRES!

ward forests, and the long-standing custom of uncontrolled, indiscriminate burning of the woods. Intangible though the results are now, there is nevertheless clear evidence that the project work has had a deep influence in provoking the rural people to a thoughtful appreciation of forest values and the need of forest fire control."

Others in 1931 were less restrained in their appraisal of the Project. At the College of Agriculture, University of Georgia, President Andrew M. Soule declared the Dixie Crusaders "did as much to arouse a new consciousness and create an understanding appreciation of forestry as anything which has happened in the 25 years I have been a resident of the state."

L. S. Carter, county agent at Kingstree, South Carolina, reflected the farmers' viewpoint. "Farmers from practically every community in the county have favorably commented on the program," he said. "The impression made on the school children will be worth untold value in the future."

At the top level of southern forestry, P. N. Howell, member of the Mississippi Forestry Commission, who "had ample opportunity to observe the effectiveness of the Project," was of the opinion that its value "has been such as to revolutionize our people in their regard for forest protection and reforestation."

In Florida, Russell W. Bennett, president of the Florida Forestry Association, was convinced "the people of Florida have been awakened to the economic necessity for replenishment of their timber supply," and that because of the Project "there is acceptance of the fact that our forest resources may again provide a principal source of revenue and employment."

H. A. Smith, state forester of South Carolina, considered the Project "the outstanding feature of forestry education in America today."

And typical of the teaching reaction, I. J. Turner, principal of Flora Rosenwald School, at Flora, Mississippi, voiced "the sentiment of 500 colored citizens" when he stated "much good will follow the service" provided by the Project. "Our children now talk of *carefulness* about fire."

Few will contest the point of view that The American Forestry Association and the states of Florida, Georgia, Mississippi and South Carolina gave forestry in the South a tremendous boost at a time when it needed it most. If this were all the Southern Forestry Educational Project accomplished, it would still be enough to earn for the sponsors a lasting debt of gratitude from those in the South of 1955 who are sampling of the fruits of a new and mounting prosperity.

But it is not all. This writer trod the southern woodlands before, during and after the Southern Project, not as a forester seeking growth or volume data, nor as a humanitarian concerned with the hovels and stigma of a Tobacco Road. He was there as a working journalist with ears attuned to what people were saying, and eyes focused on what people were doing.

In 1932, he observed plowed fire lines around timber that had been burned year in and year out; he witnessed fire lookout towers in increasing number rising above the piney woods; on large stretches of waste land, he looked out upon the dark rows of planted young pine that were beginning to show. He attended meetings of organizations anxious to have a part in the rebuilding of forest resources; he listened while educators sought forestry knowledge and courses of instruction for the classroom; and he watched as state forestry began to spread its wings under the impetus of more clearly defined and vigorous public backing.

During the spring and summer of 1954 he returned to the Project states, to follow once again in the steps of the Dixie Crusaders.

His conviction—and he found it also to be that of many southern leaders—is that the South's phenomenal advances in forestry is a great triumph for the processes of education, of an informed and interested public giving support to a program that finds industry, government and the people working together for the betterment of all. Furthermore, that the educational process has its roots deep in the hearts and minds of those millions of school children of a quarter century ago who came in contact with the Dixie Crusaders—children who are today's landowners, businessmen, educators, politicians, civic leaders, bankers and legislators.

Like Mississippi's State Senator Willie David Womack, Jr. One of forestry's staunchest supporters, this lawyer and landowner of Belzoni, Humphreys County, came off the floor of the closing session of the 1954 State Legislature to tell this writer:

"I have been interested in forestry ever since that young feller drove a truck up to our schoolhouse and spent an afternoon showing us motion pictures and talking about pine trees. I've never forgotten what he said."

In September, the author will retrace the path of the Dixie Crusaders through Florida, Georgia, Mississippi and South Carolina, appraising advances made in forestry under the stimulus of expanding education and a South-wide economic revival. And he will report on the new position forest industries now occupy in the southern scheme of things, along with the responsibilities and problems that grow more challenging as the days of the years multiply.

Stop Woods Fires!

Stop woods fires! That was the sole message of AFA education trucks that put on programs at every one-room school in South

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In a *Dragon* Fire Pump you'll find features firefighters always have wanted . . . features that boost efficiency and reduce fatigue.

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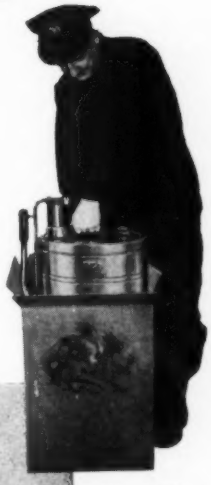
What's more, the firefighter can have both hands free when he has to use shovel, rake, or other tool. He just lets go the pump lever and shut-off nozzle—the pump always is ready for instant action when he needs it again.

A Dragon Fire Pump comes completely assembled and requires little maintenance. There is no pump packing to dry out: even after standing idle for long periods, the pump is ready for instant use.



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FROM EVERY ANGLE

Traditional K&E care and precision go into the making of these useful forestry instruments. They are *rugged* . . . designed to stand up without the need of constant adjusting even under the rough usage of forest work.

THE RIGHT ANGLE PRISM

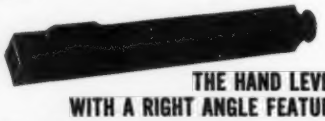
This compact instrument consists of a single ground triangular prism and it, therefore, cannot get out of adjustment. A plumb bob can be attached to the hook of the handle.

THE RIGHT ANGLE MIRROR

This instrument gives a slightly larger field of view and is adjustable. As an added feature, a small plumb bob is conveniently stowed in the handle.

THE DOUBLE RIGHT ANGLE PRISM

Consisting of two ground pentaprisms separated by a plano-parallel element, it can be *placed on a line between two points* and a third point at right angles can be sighted. A plumb bob can be attached or the instrument can be mounted on a staff.



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Here is a dual-purpose instrument with all of K&E's famed precision. While its principal use is as a hand level, it offers the right angle feature as well. Note the flat base permitting use on a level board.

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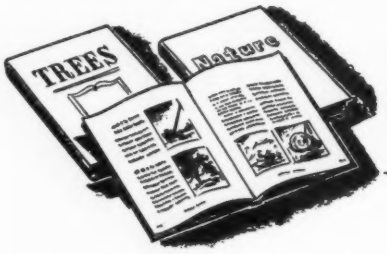


Reading About CONSERVATION

By ARTHUR B. MEYER

IN the long, hot days of August millions of lucky Americans forsake their usual pursuits and go in quest of far away places. Probably in no other month are more people placed in direct contact with the outdoor world of nature—its woods and fields, lakes and streams, valleys and mountains. This is all to the good but what of the folks who stay at home? There are plenty of outlets for these stay-at-homers too—if they are ingenious enough to take advantage of their opportunities. So let's go travelling.

Did you ever have an inner desire to discover something new—to achieve something that no other human has ever accomplished before? Most of us have. It's the explorer in us that finds little outlet in a day and age where there is little that is really left to explore. *Tiger of the Snows* G. P. Putnam's Sons, 224 pp., $4.50) is the story of a man who found some unexplored geography. Tenzing Norgay, a hardy Asiatic recognized as one of the finest mountain guides in the world, has lived at the foot of formidable Mt. Everest all his life. As the years went on, Norgay became almost obsessed by one overpowering urge — to scale that precipitous, unconquered mountain. "Someday I'll do it too," he kept telling himself.

After six unsuccessful tries, Norgay in 1953 became the first of two men to creep to the top of that bleak, windswept peak. With him was Edmund Hillary, the Englishman who was honored by his Queen for his intrepid exploit. *Tiger of the Snows* is Norgay's autobiography—an epic on how the highest mountain in the world was finally scaled. Written in collaboration with James Ramsey Ullman, Norgay's story is full of the sinews of adventure. It's the story of a man who went up his mountain as a humble porter and returned an international hero. The impact the exploit had on Norgay's personal life is one of the most interesting sections in the book. Recommended.

Few vacationists to the woods and mountains have the companionship of a perceptive naturalist as guide and teacher. But summer readers who pick up Wallace Byron Grange's *Those of the Forest* (The Flambeau Publ. Co., 314 pp., $4.75) will soon lose themselves in this absorbing volume that defines the world of nature as it evolves around the snowshoe rabbit. A man who has made his career in wildlife work, Mr. Grange is an observer of the outdoors, a philosopher, and one suspects, something of a mystic.

"The chant of earth and sky and living creatures is old . . ." he writes. "In the chant plainly heard by all those of the forest is the struggle of them all, their lives joined together and indisseverable in the onrushing sweep of time and life that is neither accidental nor purposeless, but contains always the thought and destiny of Creation."

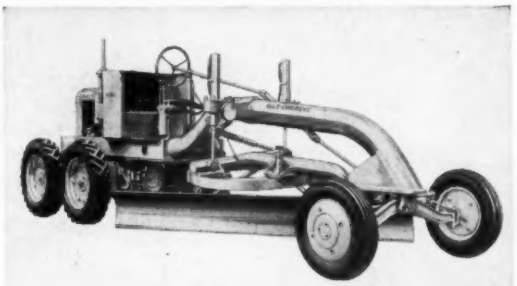
The strength of this story of forest life lies in its clarity. What is meant by the balance of nature: why we define the forest as a community of interdependent living things; how predation fits into the scheme of wilderness; what the concept of the pyramid of life really amounts to. All these mysteries are explored as Mr. Grange explains the "how" and the "why" of the vast complexity of wilderness life, the ever-continuing change, the march of the seasons, the ebb and flow of life forms. Excellent drawings by Olaus J. Murie complement this readable and informative volume. An informative summer offering.

Leaving the mountaintops and the forest floor let's next explore the waters of the Columbia River and the Pacific. *Return to the River* by Roderick L. Haig-Brown (William Morrow & Co., 250 pp., $5) presents the life history of a female Columbia

Model D *Standard* (GASOLINE ENGINE)

STANDARD EQUIPMENT: Six-volt electrical system, two headlights, one rear and stop light, muffler, 10-ft by ⅝-in. moldboard, hydraulic controls for moldboard lift, four 7.50-20 rear and two 6.50-16 front tires with tubes.

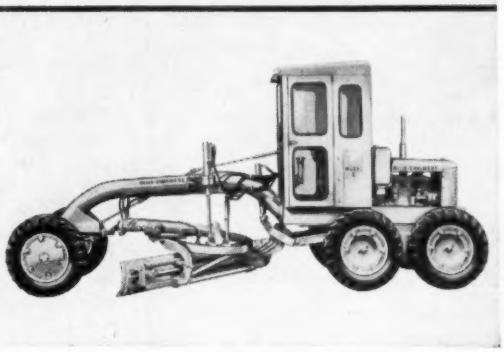
Total weight	8,800 lb	Blade pressure	4,900 lb
Wt. on front wheels	2,700 lb	Four speeds forward to	25.6 mph
Wt. on rear wheels	6,100 lb	Reverse to	3.3 mph



Model D *Special* (GASOLINE ENGINE)

FULLY EQUIPPED AS FOLLOWS: Six-volt electrical system, two headlights, one rear and stop light, muffler, 10-ft by ⅝-in. hydraulically shiftable moldboard, 6-valve control group, four 8.25-20 rear and two 8.25-20 front tires with tubes, front wheel lean, power circle turn, hydraulic scarifier, all-steel cab.

Total weight	10,900 lb	Blade pressure	6,450 lb
Wt. on front wheels	3,750 lb	Scarifier pressure	4,900 lb
Wt. on rear wheels	7,150 lb	Four speeds forward to	25.6 mph
		Reverse to	3.3 mph



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50 - hp diesel engine with follow-through combustion

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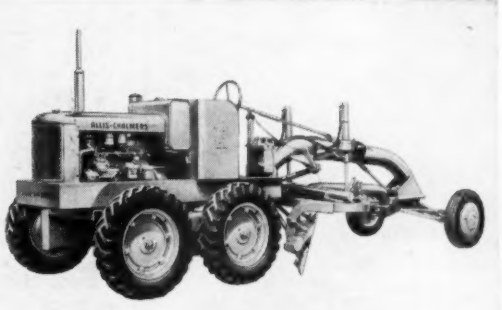
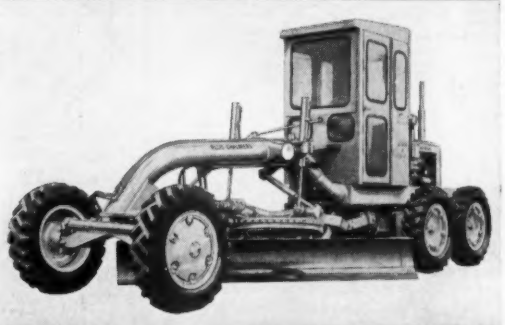


Model D Diesel *Standard*

STANDARD EQUIPMENT: Twelve-volt electrical system, two headlights, one rear and stop light, muffler, 10-ft by ⅝-in. moldboard, hydraulic moldboard lift controls, four 7.50-20 rear and two 6.50-16 front tires with tubes.

Total weight	9,350 lb	Blade pressure	4,900 lb
Wt. on front wheels	2,760 lb	Four speeds forward to	25.2 mph
Wt. on rear wheels	6,590 lb	Reverse to	3.2 mph



Model D Diesel *Special*

FULLY EQUIPPED AS FOLLOWS: Twelve-volt electrical system, two headlights, one rear and stop light, muffler, 10-ft by ⅝-in. hydraulic shiftable moldboard, 6-valve control group, four 8.25-20 rear and two 8.25-20 front tires with tubes, front wheel lean, power circle turn, hydraulic scarifier, all-steel cab.

Total weight	11,450 lb	Blade pressure	6,450 lb
Wt. on front wheels	3,750 lb	Scarifier pressure	4,900 lb
Wt. on rear wheels	7,700 lb	Four speeds forward to	25.2 mph
		Reverse to	3.2 mph

You can still buy a model D for one-third the cost of a large motor grader, and it's the most popular, most versatile small grader on the market. In addition to the units illustrated, the Model D is available with other combinations of accessories . . . or with any of these useful attachments: rear-mounted ⅝-cu-yd loader; shoulder maintainer; one-pass windrow eliminator; V or blade-type snowplows. Ask your nearby Allis-Chalmers dealer for a demonstration . . . and prove the Model D's value.

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River chinook salmon. With photographic realism, Mr. Haig describes the hatching of the salmon in the Columbia, its travels to the sea and its return to its birthplace to spawn and die. Entwined with the story of the fish and its natural history are glimpses into the lives and work of ichthyologists and fishermen. An interesting book on a subject that has intrigued Americans since the days of Lewis and Clark.

But you can't read the whole summer away? Has your family explored the woods and trails, valleys and hills within easy walking or driving distance of your home in recent months? If you haven't, it's time you did. And just to help out when Junior asks "What's the name of that tree, Pop?" a new and enlarged edition of an old standby—*Knowing Your Trees* (100,000 copies in 18 years) is just off the press. Now in its 15th printing, *Knowing Your Trees* is published by The American Forestry Association, 919 Seventeenth Street N.W., Washington 6. D. C. The fat new edition sold for $6 contains 328 pages and 851 striking black and white photographs and maps—dozens of the new ones by that craftsman of tree closeups, Dr. Warren D. Brush. The easy-to-read text is by Dr. Brush, formerly of the U. S. Forest Service, and G. H. Collingwood, formerly forester for the AFA and presently with the legislative research branch of the Library of Congress.

Knowing Your Trees is a detailed "Who's Who" of the plant kingdom. Perhaps the best tree identification book on the market, it contains general information about each species, its range, economic importance, description of the wood, use by wildlife, special insect enemies, and many other facts about trees and tree life.

In this new edition the number of tree species has been enlarged to total 162, twelve more than the last edition. Comparisons between individual species have been sharpened to more clearly bring out differences and similarities. Timber stand and lumber cut figures have been revised to make them current. Many of the photographs used in previous editions have been weeded out and replaced by new ones. The index has been expanded. Nine of the ten hardiness zones in the United States and Canada (Zone 1 in northern North America is not shown) are strikingly portrayed in a two-page zone map in color. A bright dust jacket by Artists James Fisher and Jackson K. Lambert is a special feature.

This is a splendid book — one every family should have in the bookshelf by Dad's easy chair, handy for ready reference. To thousands of American families, *Knowing Your Trees* has become an old friend. It would be welcome in your home, too.

Well Done, Congress!

THE nip-and-tuck race to place the newly-enacted bill to correct mining law abuses on the President's desk before he left for Geneva failed last month. However, as *American Forests* went to press on July 25 it learned that the President had signed the measure — Public Law No. 167 — on July 23 prior to flying home. At the same time the President praised the constructive efforts that led to the enactment of the new law and called it a progressive step in sound resources management. The haste made in placing the bill before the President is due to the mounting number of claims being filed in public lands.

After years of futile effort by members of Congress and conservation groups to correct the menace posed by phoney claims, The American Forestry Association last February put the program on the right track by calling a conference of mining leaders and representatives of the Agriculture and Interior Departments. With the complete cooperation of the American Mining Congress, companion bills were drawn and introduced in the House and Senate. While a number of Republican and Democrat legislators alike introduced bills, those finally acted on were Senator Anderson's (New Mexico) S. 1713 in the Senate and Rep. Rogers' (Texas) HR 5891 in the House. The efforts of Senators Anderson and Barrett (Wyoming) were especially outstanding in pushing the measure through the upper house. (See story page 32).

Representatives of Interior and Agriculture last month were acclaiming the speedy enactment of the bills that had the support of conservation, the mining industry, and the Congress.

Davis New Forest Service I&E Chief; Parkinson Retires after 45 Years

CLINT DAVIS, director of the Smokey Bear forest fire prevention campaign, has been named chief of the Forest Service's Division of Information and Education, Forest Service Chief R. E. McArdle announced last month. Mr. Davis succeeds Dana Parkinson who retired June 30 after 45 years with the Service.

One of the most popular public relations men in the country, Mr. Davis will bring a newspaper background to his new job. A former outdoor editor for the *Atlanta Constitution* he also served as director of public relations for the Georgia Department of Fish and Game. He entered the Forest Service in 1937 as senior administrative assistant to the Regional Office at Atlanta and in 1941 was placed in charge of the information and education activities of Region 8. He served in that capacity until his transfer to the Washington office in 1946, except for 30 months of military service during the war (Signal Corps). For the past nine years he has served as Director of the Cooperative Forest Fire Prevention (Smokey Bear) campaign during which time he has travelled widely throughout the United States boosting forest fire prevention and winning a host of friends both for the Forest Service and forestry in general.

Mr. Davis

Asked if he had any observations to make in taking over his new job, Mr. Davis, said, "I am going to do the best job possible in carrying out the excellent I&E program developed by Dana Parkinson. I hope to utilize the advertising experience I've gained in the Smokey program in further dramatizing the importance of forestry—state, private and federal—to the American public. It's a big job. I'll need help."

Mr. Parkinson

A graduate of Dartmouth College and the Yale School of Forestry, Mr. Parkinson began his work with the Service in 1910 as a forest assistant on the Kaibab National Forest, and rose steadily through the ranks to assistant regional forester at Ogden, Utah, in charge of the Division of Lands and Public Relations. Transferred to Washington in 1936 as I&E Chief, Mr. Parkinson soon had completely reorganized the Service's information work. Through his efforts, information and education activities are now more generally recognized as part of everybody's job rather than the I&E Division's alone. He encouraged the development of "fact sheets" and instituted the first use of color films by the federal government. Under his supervision, the Service's "show-me" trips on national forests have been greatly expanded. Mr. Parkinson has been closely associated with the Cooperative Forest Fire Prevention Campaign since its inception in 1942 and was instrumental in helping this effort to "get off the ground." He was chairman of the committee for the 1949 Yearbook "Trees" and his latest job was planning the Forest Service's 50th Anniversary.

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Model OMG
3½ brake hp. all-around woodlot and pulpwood saw. Lowest priced in its class. From $194

CHOOSE FROM 6 NEW "MG" MODELS

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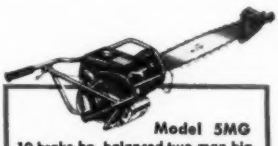

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FIRST NAME IN HERBICIDES

Six Story Forest

(*From page 23*)

"You've got to do this cutting our way. When we mark these trees to be cut the marked trees will be cut and those only." For some operators dislike leaving a tree standing in their path. They'll say, "I can't afford to leave that tree," pointing to a comparative youngster and they really believe it. Consequently it often requires time to convince them that they can build up their production volume much more quickly by taking only the big, mature stuff even if they have to skirt and go around the younger trees in the process. Nor do the boisterous young French-Canadian cutters always take kindly to the signs tacked up in their camps "Souls les arbres marques doivent etre coupes" (Marked trees only shall be cut). Many would prefer cutting a clean swathe as their dad did before them. Continuous educational effort is required.

How does the key man in a forestry operation go about his task of marking 35 percent of the trees in a compartment — no more no less? What factors does he weigh? Before marking, compartment stand tables are examined in the office, Strout explained. The "block marking" system is employed by IP which calls for establishment on the ground of physical marking units or blocks small enough to permit the marker to see all four corners at one time. Once in the forest, the forester sees his prospective cut in his mind's eye and he can determine his volume on any block without involved computations. In the building of the uneven age forest not all mature trees are cut but the windthrow factor must always be considered. For example, towering spruce on exposed hillsides are always taken for the wind creates a powerful leverage in their crowns. The soundness of the trees—their life expectancy during the next cycle of 10 years is always weighed. Foresters keep a keen eye peeled for all defects. Conk on the outside bark frequently means "hardening of the arteries" or dry rot inside. Pitch flowing profusely usually means windbreak somewhere on the tree's surface. Foliage is studied with a clinical eye for good or poor color. Crowns—an important factor in the establishment of an all age forest—are examined. In forests of even age, the crowns are more restricted and consequently growth is slower than in a stand that has been opened up and where the crowns have had opportunity to spread out. A living crown 30 feet long on a fir 100 feet tall is considered good crown length in northern woods. One thing IP markers wish they knew more about is selection of quality seed trees for reproductive purposes but genetics hasn't yet given them all the answers they need on this score. Finally, a prudent forester knows that he sometimes has to "sweeten up the job" a little—which means that in making a living loggers must not be required to spread out too far in meeting their production quotas. In commercial forestry, everyone has to make a living but it is notable at IP that foresters do the "sweetening" in this respect, not the loggers.

The tenacity of trees is a never ending marvel to people who get inside a New Hampshire forest. Examine the wind-tilted trees in this rock-ribbed region and you will observe how the shallow root systems of the pines and firs sit on smooth granite boulders like hens on so many eggs. The soil, primarily podsolic and is derived from glacial drifts of granitic and schistose nature. Wind, fire, diseases and man himself may take a toll of these forests but the truth is they are practically indestructible. While they can be slowed up and retarded by outside enemies, they somehow manage to absorb all such onslaughts and even fight a grim war of attrition among themselves, like so many Scottish clans, for space in the sun.

Of the millions of seedlings that start out so hopefully relatively few survive. To satisfy yourself on this point select an observation post four-feet square in a young even age mixed stand. A moss-covered stump on your plot makes a good observation post. When you first start looking you notice the profusion of stones and such indicator plants (growth that gives assurance that trees will thrive) as the witch hobble, bunchberry, goldthread and Christmas tree ferns. But if you look closely at the forest's carpet, and push the ferns gently to one side, you will observe that your rock garden also contains clusters of tiny seedlings. On one such capsule plot 84 firs, 60 spruces, two dozen pines and a handful of hardwood sprouts were counted. How many of them will

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survive? The answer can probably be found in the stump you are sitting on and its proximity to the next stump at the edge of your plot, four feet away. And that answer is probably one seedling—perhaps the eight-inch fir by your elbow that already has a little the better of it on his neighbors. The others will be ruthlessly rubbed out in the murderous infighting trees carry on for breathing space. In addition to fighting among themselves, New Hampshire's trees are also explorers and colonizers. Give them the slightest opportunity and they will invade and take charge of any pasture or open field. Young seedlings quickly rear their heads. Then given a few years to gain a foothold and they will start to fight among themselves again in the never-ending battle for survival.

Why Selection Cutting

Foresters know that clearcutting can retard but not destroy the trees in this land of great natural reproduction. Existing even age stands in Phillips Brook that were largely cut over in the period from 1900 to 1912 are ample proof of this. The bad feature of clearcutting from the standpoint of commercial forestry is that regeneration and recovery is too slow. Nature has its own laborious process for healing such clearances and it requires time. Then too, young trees can't grow in the great heaps of slash that result from clearcutting and which are also a fire hazard. The young seedlings will march right up to and surround the slash piles but they can't go beyond.

This is why IP foresters have such high hopes for their selection cutting system. To give nature every possible assistance in this establishment of six stories on one forest—which they can't help but feel will prove more disease resistant than even age forests—the foresters continue to carry on a number of experiments, some of which have been successful and some of which have not. One girdling test established in a 60-year old spruce stand in 1949 has not as yet come up to expectations. Two test plots were set aside. In one, all small, diseased and defective trees were girdled in a low thinning and improvement operation. The other plot, used as a check on the first, was left as it was. When examined last year the girdled area showed a growth increase of 26.5 square feet of basal area in five years compared to 20.3 square feet in the untreated plot. However, growth comparisons in the last 10

years indicated that the 8 percent greater basal area in the treated plot was not really significant since growth in this area has always exceeded that in the untreated plot.

"Give it more time," is Superintendent Ruch's comment on the experiment at this stage.

Timber stand improvement work is being carried on continually at Phillips Brook. Last year 11,838 cull hardwoods were treated on 1,358 acres. A total of 12 weeks was devoted to the project. Bumping, tabs and frilling were the treatment methods employed. The work continues this year. (Bumping-crushing bark around the trunk of the tree with back of axe; frilling—in which a single line of overlapping axe cuts is made through the bark and into the wood; tabs — sodium arsenite tabs placed under the bark of the tree.)

Roadbuilding is also a subject to which IP foresters have given considerable study. Making use of the material at hand, wooden culverts were originally built and installed but Strout believes time may prove that metal would have been preferable both from an economic and longevity standpoint. When roads are not in active use, the old Forest Service system of constructing earthen diversion barriers at regular intervals on the routes is employed. In the event of big washes that accompany hurricanes this assures that only limited sectors of the roads will be washed out, rather than an entire slope.

Water on the entire tract is like Ivory Soap, 99.4 percent pure, tests have showed. The entire area abounds in fast running, crystal-clear brooks and streams and it is quite safe to quench your thirst in any of them. There is no pollution.

Finally, the IP foresters themselves are an interesting lot—eager, curious but not claiming too much for their experiments for they realize it will require upwards of 60 years and many more cycles to tell the whole story. Strout, quiet and keen-eyed is a man completely happy and at home in the woods. Carlaw, Brooklyn born and bred, is decisive, quick and a person who looks at the operation in terms of the whole. Ruch, New Hamsphire to the core and a former judge impresses the visitor as a very shrewd individual. He is not a textbook forester or indeed a forester at all but rather a contemplator of forests. One judges he studies trees and their workings much as he studied philosophy and aesthetics at the University of Michi-

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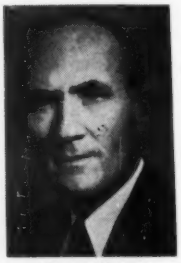
Governors' Fire Parley Urged

A CONFERENCE of governors of southern states and their state foresters to study and if possible to solve how to check substantial and growing forest fire losses south of the Mason and Dixon Line may be called by Governor LeRoy Collins, of Florida, in conjunction with the 80th Annual Meeting of The American Forestry Association October 3-6 at Jacksonville.



Mr. Pellicer

Governor Collins is being urged to call the parley by X. L. Pellicer, vice president of AFA and general chairman of the Jacksonville convention. In a letter to Governor Collins, Chairman Pellicer said:

"The southeastern states have the unenviable reputation of having the largest acreage and the greatest percentage of forest land burned of any region in the country. Each of us who are concerned over the forestry problem believes that a meeting of the Southern Governors with their respective State Foresters, in conjunction with the AFA convention, would be an ideal time to discuss this forest fire situation and to devise ways and means of bettering it. . . We believe this conference would be of great benefit in pointing up the forest fire problem in the South and in more rapidly working towards the goal of saving millions of dollars of timber annually."

Working closely with Mr. Pellicer on the project is C. H. Coulter, state forester of Florida, and representatives of forestry from both the public agencies and private forestry. To facilitate a proposed Governor's conference it is probable that a conference of southern state foresters will be held one month prior to the October convention to prepare a fire agenda. Mr. Pellicer said that Lowell Besley, executive director of the AFA, will be invited to participate in this preparatory conference.

Commenting on Mr. Pellicer's proposals, Mr. Besley said "Losses from forest fires have been much in our thoughts in recent months. The AFA has always had a deep and abiding interest in southern forestry since the days of our own Dixie Crusaders of several decades ago. (See page 33). We have rejoiced in southern forestry progress. We have grieved at southern forestry setbacks. In this connection, we would be most happy if AFA's southern convention could be utilized as a vehicle whereby the continuing effort against fire could be materially strengthened. To accomplish this we must rely on the solid judgment of the governors and their representatives and our own strong membership in the South, all who know these problems at first hand".

Meanwhile, plans are developing rapidly in the four-day convention at Jacksonville's George Washington Hotel with the theme "Southern Forestry—An Industrial Revolution with Roots." Businessmen are displaying keen interest in all aspects of the program dealing with forest fire prevention in a region where fire losses have been extremely heavy this past year. Other members are evincing interest in a variety of field trips that have been arranged. These include jaunts to St. Augustine, the oldest city in America; Marine land; Silver Springs and the Norris Cattle Ranch; and naval stores and forests genetics work being carried on at the Southeastern Forest Experiment Station of the U. S. Forest Service.

McCarthy Resigns at *American Forests*

Keith R. McCarthy on July 15 resigned as assistant editor of *American Forests,* a post he had held for five years. Prior to joining the staff of The American Forestry Association during the directorship of S. L. Frost, Mr. McCarthy had held assignments on newspapers in a number of western, southern and eastern states including a tour of duty with *Congressional Quarterly,* published in Washington, D. C.

Long aware of the opportunities offered by Washington's many publications to competent writers and production men, Mr. McCarthy in July decided to go into business for himself and has already lined up several good accounts calling for writing and editing skills.

In addition to his production tasks in connection with *American Forests,* Mr. McCarthy will be remembered as the author of well-received articles on Alaska and the U. S. Forests Products Laboratory. A future McCarthy article on wildlife research is scheduled in *American Forests.*

gan—with an empirical bent and with major emphasis on observation and practical values. Ruch enjoys watching trees grow and likes nothing better than to sit down in the midst of a plot of seedlings to tell their futures. At the same time he displays an almost proprietory interest in the forest's wildlife although he explodes at your suggestion that he's practically running a wildlife refuge. He is managing, he will tell you succinctly, a commercial forest where good forestry principles apply. And that is enough.

A Quick Comparison

In flying back to Boston from this forest retreat it was interesting to stack the work going on in this IP tract against AFA's three big goals for forestry adopted after the Forest Congress. A rather quick analysis, it is probably not completely correct but it added up something like this:

1. *To meet the essentials of forest protection.* The Phillip Brook area is blessed by frequent summer rains and sprinklings, probably due to proximity to the mountains, that help to reduce fire hazard. The area has not had a bad fire in recent years. The road net is well developed. Suppression equipment is located at strategic points on the main artery of travel and near all cutting operations. Selection cutting tends to mitigate fire hazard by reduction of slash concentrations. Ruch would like to see one company-owned and operated fire tower to complement the fine service provided by the state fire district organization. In case of an emergency, a detailed plan of attack has been worked out in connection with nearby communities. Water available in quantity. On disease, spruce budworm (which actually attacks the firs first) is biggest potential hazard. The U. S. Forest Service has been conducting experiments on IP plots to find ways to increase budworm resistance on the part of the stands. Ruch also has a strong conviction that once established, an all age forest, and with firs and spruce interspersed with hardwoods will tend to increase budworm resistance —especially if foresters continue to encourage spruce over the firs.

2. *To improve the national timber crop in volume and quality.* More volume and better quality produced at a faster rate is the very basis of the Phillips Brook conservation project. One Forest Service expert recently referred to the Phillips Brook and Petersham (Harvard) forests as the first, albeit crude, management plans in New England. As

the pilot plant project for IP's extensive northeast holdings, much depends on the project. The compelling need, and one that has not as yet been solved, is more extensive markets for Phillips Brook hardwoods. Paris Manufacturing Company takes up some of this slack but can not absorb it all. Movement of hardwood pulpwood may eventually help solve the problem. If so, this will aid in increasing the softwood composition of the forest. On the research side, few industrial firms in the East are looking for answers more diligently than the Phillips Brook forestry force.

3. *To obtain the maximum of economic and social services from our forests by realistic application of the principles of multiple use in their management.* Phillips Brook is a pilot plant forestry project. Since the practice of forestry and forest research are the twin major jobs on the tract IP has not as yet deemed it realistic to open up the area to sportsmen in the sense that is true in the case of Northwest industrial holdings. Fear of fire is a major consideration. Since selection cutting and limited use by sportsmen have combined to build up the game and fish population, some grumbling has been heard on the part of sportsmen in closest communities. All waterways are open to sportsmen in New Hampshire but at Phillips Brook fishermen must walk in and out since IP maintained road is closed to them. While road net had not been opened to sportsmen, Phillips Brook regularly plays host to small forest-type meetings and convention groups and once entertained the members of AFA. No people live on or near the forest with the exception of the forestry and lumbering personnel. Selection cutting assures good control of soil and water aided by the fact that horses are used rather than tractors in logging operations. Roadbuilding is carefully planned and executed. In brief, the tract is managed intelligently and with an eye to the future. One dissenting vote comes from sportsmen who would like to be given greater opportunities in the valley. For the present at least, IP believes that the importance of its forestry program outweighs that of granting sportsmen complete run of the area.

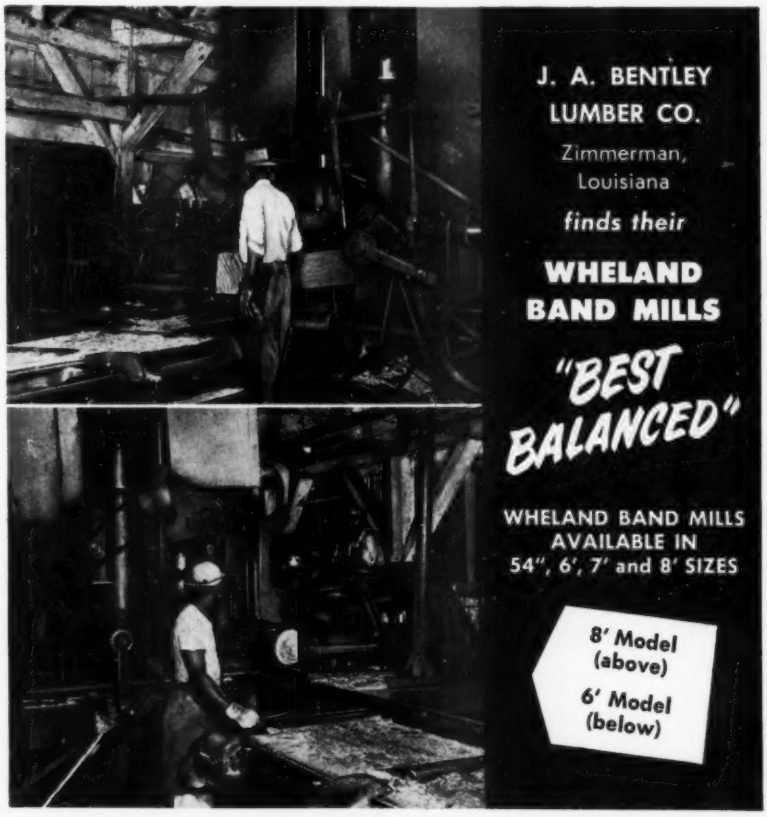
All in all, a pretty good forestry batting average one must concede.

STROUD PROMOTED

Promotion of Richard H. Stroud to the post of executive vice president of the Sport Fishing Institute has been announced. He succeeds Dr. R. W. Eschmeyer who died suddenly in June. Formerly assistant executive vice-president, Mr. Stroud becomes the second person to hold the responsibility of guiding the fishing tackle industry's conservation program to help "shorten the time between bites." Prior to joining the Institute two years ago, Mr. Stroud served for five years as the first Chief Aquatic Biologist of the Massachusetts Division of Fisheries and Game, in charge of fishery research and management. He drew up one of the first fish management policies in the country and developed Massachusett's current modern program emphasizing liberalized sport fishing regulations, multiple use of water supplies for fishing, rehabilitation of fishing waters, control of overcrowded fish populations, and conservation education.

Mr. Stroud

Mr. Stroud holds degrees in biology and fisheries from Bowdoin College and the University of New Hampshire.



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How Fast Does a Tree Grow

(*From page* 15)

they would do. The Monterey pine gave such an astonishing performance that it was soon known as the "remarkable pine." Now in New Zealand, Australia, and South Africa together, there are about a million acres of planted Monterey pine. This tree has made it possible to build one or more pulp mills in South Africa in an area of open country where no trees grow. By the time the mills are built, a planted forest of Monterey pine will be ready to feed them!

Several interesting deductions can be made from the cross-section illustrated. First of all notice that each ring starting at the center (pith) is made up of a light colored (wide) portion and a dark colored (narrow) portion. The wide light colored part is called the springwood, the narrow dark colored part is the summerwood. Knowing that our fall is New Zealand's spring, during what months do you think these annual rings were formed? Notice that the first two rings are about the same width, then the next two are a trifle narrower, and the remaining three are progressively still narrower. Now what might cause this narrowing? If the trees were planted in rows six to eight feet apart, how long might it be until the crowns begin to shade each other, and the ever-reaching roots below ground begin to compete with each other for available water? There is however one thing not to overlook. Ring No. 5 actually has a greater total area and hence greater tree volume than ring No. 1 which is much wider! Finally, was the tree cut at the end of New Zealand's growing season, or just before the summerwood was to form? The rings tell the story.

The one hundred year old white ash tree six inches in diameter is no less remarkable as an example of extreme slow growth. White ash is a common and important hardwood tree of the eastern half of the United States. Ordinarily, a six inch open grown white ash might be from fifteen to twenty years old. What then could have caused the slow growth of our century old tree? The section photographed was sawed from the end of a stick of firewood stacked in a pile outside a camp building in the Kittatinny Mts. near Sussex, N. J. Although the tree itself was not seen, the terrain where it grew provided very poor conditions for growth. The sparse sandy soil was thin, scarcely covering the irregular rocky surface beneath, and there was little humus to absorb the rain. Do the rings show the relative amounts of rainfall received? If we could assume that the tree had the same amount of competition each year for light and soil moisture this would be so, but it is probable that competition with other trees varied, and therefore the ring pattern reflects both annual rainfall and competition (assuming no destruction of the leaves).

The black spruce showing almost unbelievably slow growth (one quarter of an inch in diameter in fifty years) was found in a bog where its roots were covered with water nearly all the time. When the great continental glacier melted northward, it left behind it hundreds of thousands of tiny ponds and lakes, and during the past twenty thousand years a unique and interesting plant association has formed floating mats which are slowly filling in many of these smaller ponds. Sphagnum moss forms a green carpet held together by the dense interlacing roots and stems of heath plants. The principal pioneer tree on the extending green mat of the bog is the black spruce. Imagine a tree fifty years old and only fourteen inches tall. Trees of the same age and species growing nearby on "hard ground" may be twenty feet high. But in the bog too much water makes it difficult for the roots to get sufficient air, and also because of poor drainage certain decomposition products may affect normal root growth. So it appears that the Greek admonition "Nothing too much" applies to the amount of water needed for tree growth.

Maximum height growth in trees

Merrill Honored

Perry H. Merrill, state forester of Vermont, Lawrence F. Whittemore, industrialist, and Katharine Cornell, actress, received honorary degrees from Middlebury College, Vermont, last month. Merrill received an honorary doctor of science degree.

can be expected from first season sprouts when a small to medium sized tree has been cut. This is because the stored food and energy from a relatively large root system may be channeled into a single stem. Under such conditions, height growth is phenomenal, and the leaves borne are often monstrous in size. Slippery elm sprouts twelve feet high the first season have been observed, and those from the ailanthus or tree-of-heaven ("tree that grew in Brooklyn") have reached a height of twelve and a half feet.

Perhaps the greatest height attained in a single season must be credited to a sprout of paulownia or Empress-tree of Asia, growing in North Carolina. Some of the botanists tell this story. It seems that one of them found a paulownia sprout ninteen feet five inches tall and two and a half inches in diameter. He thought it worthwhile to report it at an annual science meeting, and later published his figures in SCIENCE (1921) under the heading of "A Phenomenal Shoot." There was a geologist in the audience, and something in the way the report was presented kindled the spark of competition in his soul. At least the botanists think so because they claim that he left the meeting determined to beat this record. They suggest that he went home, looked around for the most vigorous Empress-tree he could find, cut it at exactly the right time and then practically camped there to watch it sprout and what's more to help the sprout all he could. They claim that he watered it, cultivated around it, applied fertilizer and did everything possible to promote it. Whether or not this is fiction, it is a recorded fact that at the next annual meeting our geologist walked in with a sprout measuring twenty one feet six inches high, ten inches in circumference, and bearing leaves the largest of which was thirty-eight inches in diameter (usual diameter six to eight inches). He published his figures in a later number of SCIENCE under the heading "A More Phenomenal Shoot!" So far as is known this record has never been equaled by any other temperate climate tree.

Fort Clatsop

(*From page* 31)

to say with an exactness just how important the Lewis and Clark expedition was in securing the country watered by the River of the West, the so-called River Oregon which had only recently been given the name of a Boston sea-captain's vessel. Yet the very circumstance of their being here was unquestionably of aid in making it American; and their effort served also to remove the great river from the void of rumor, guess and fantasy which had surrounded it. After Lewis and Clark, the Columbia was something the mind could deal with. So was the entire Northwest.

It is good to have a restoration of their camp at Fort Clatsop. If the many dams on the Columbia, along with the atomic plant on its bank at Hanford, will do to represent the present and the future, then Fort Clatsop will remind us of the river's romantic past. The careful restoration has all the directness and simplicity of the American frontier at its best. Nothing less will do for the river of continuous woods that had flowed in solitudes since the flight of years began, or for the men who first followed its wild dashings and those of its tributaries from mid-continent to the sea.

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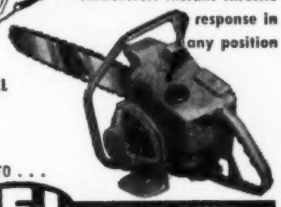
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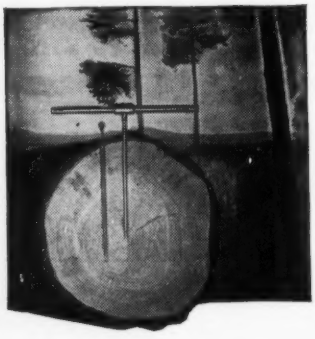
Wildlife Engineer

(From page 27)

where snow and ice entirely shut him in for the winter months. He must store his food for winter under water where he can reach it. His food consists mostly of the bark and limbs of certain trees like the cottonwood, poplar, birch, etc., not coniferous. Of course this calls for a lot of such material, and of course for a lot of room, and it all must be stored before the ice stops all of the beavers activities. The beavers live in colonies of two to twenty or more, and when they become too thick, they separate and start other colonies in new quarters. When a pair leaves to start a new home, they will some times go for miles across wooded country, passing up streams that were not to their liking until they decide on a suitable site, which will be about like this *viz;* it will be a low, marshy area with sufficient water supply to start a small stream flowing from it, or through which a small sluggish stream is constantly flowing. There will be banks or at least one bank on the side of the marshy ground three or four feet high; there will be a good supply of small trees of their food variety near by.

The beavers will now dig a burrow in the bank, and below the surface of the water, forming a tunnel that will lead upward above the high water level and there dig out a space for a living room into which they will bring grass and weeds for bedding. In their plan of living they are now confronted with some vital problems *viz;* the water in the marsh must not be allowed to fall below a stage that would expose the entrance to the burrow. It is also essential that the water be kept sufficiently deep, that in winter time it will not freeze to the bottom; there must be sufficient room between the ice and the bottom of the pond for the beavers to store their supply of food for the winter. They seem to sense all this, and that the stage of water in the pond must be kept at the requisite level. They now start to make a dam at the lower edge of the marshy ground that they want to utilize as a pond for their future use, and across the little stream. Here the little engineers show their ingenuity. In the center of the little stream they place a layer of poles perhaps eight feet long and four inches in diameter, holding them in place by stones and dirt; then they place a layer of same kind of material the other way across the first ones and bind them down in the same way; this is quite easily done for the green wood will barely float. They now try to get other sticks of wood or small trunks of trees to have one end rest on the part they have formed so that the lower ends will rest on or stick in the mud on the lower side; they will now fill in behind the work they have done with brush and they cover it with stones, mud and sod, until they have made it water tight or practically so; they now begin on the wings of the dam by laying down brush and small branches and scooping up dirt and mud to cover it all; they seem to be able to keep the water at about the same level as the work advances. The main trouble is in making the spillway or head gate across the stream hold up against the pressure of the water. The beavers will stick in poles, or small trunks of trees in any hole they can find in the head gate with the apparent plan of mak-



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ing the structure hold. In the dam I watched them build, the head gate went out on them twice before they built one to hold. It is a seeming impossibility for these little fellows to handle the logs and trunks of trees that they put in the head gates and make them stick. I've seen stones used that I'm sure would weigh twenty pounds, and I couldn't find any place where they could find them, much less know how they got them in place.

When a pond is formed, houses are built to hold the new colonies. The houses are usually four or five feet out of water and about six feet in diameter, and all have under water entrances.

I presume I have seen at least 50 dams in the different states; some were old and nearly destroyed by the elements; some recently vacated and some in use. I saw one big dam in Wyoming that had been so badly damaged by a freshet that the beavers had abandoned it, shortly before I saw it. I saw the same dam again 30 years later and some of the material in the head gate was still in place with the water rushing over; the wings of the dam were in good condition and we walked across it. It was four feet wide at the top and at the bottom it appeared to be fifteen feet thick. Tons of dirt and material had been used, but how, is a mystery to me. When a colony has been in a location a long time and the food supply is short, the beavers will dig channels far out into other areas where they can get trees they need, and always the ditches will be at the right level for the water to fill them. I submit that the beaver is the wild life engineer; without blue prints, and without tools he works and builds.

We were fishing a stream in western Wash., and found where some beaver had tried to fell a large cottonwood tree near the stream. In falling, the cottonwood had lodged against another tree, a fir, about a foot in diameter. The beavers had cut off two cuts from the cottonwood, but it failed to come down. The beavers then cut down the fir and both trees crashed to the ground together. The limbs of the cottonwood and the bark had been stripped, but the fir was not touched. A beaver will not make use of a coniferous tree. It would seem that Nature has generously endowed all her creatures with the ability to bravely meet the demands imposed by each and every scheme of life.

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Senator Anderson

(*From page* 32)

person might file a uranium mining claim or any other mining claim on lands leased by the government under the Taylor Grazing Act and acquire the right to the exclusive use of the surface resources and could exclude the person having the right to use the surface from the land. We need this bill just as badly for the public domain lands as it is needed for the national forest lands. *This is a good bill* and will correct abuses that have existed for many years and will not interfere with legitimate mining operations."

Thus the Senator from Wyoming had practically the last word on the tough mining claims problem that now appears well on the road to a happy solution thanks to favorable House and Senate action. It also may be that there is more here than meets the eye. And while anyone primarily concerned with such comparatively simple matters as good management of trees and related resources on the ground hesitates to interpret the workings of Congress, it may well be that a somewhat more cooperative attitude may be developing on the part of various users of public lands—a feeling that no one group can solve these problems single handed and that they must be worked out in an atmosphere of trust and mutual confidence.

Is there a new or changing attitude as regards public lands management and use in the sense that various users are somewhat more willing to sit down and talk over their differences—even to compromise when necessary? This would certainly appear to be true in the case of the recently-enacted amendments to the mining laws. While such lawmakers as Anderson, Hope, and Cooley have labored long and diligently for an intelligent answer to the illegitimate claims problem, it was first necessary to reconcile the mining interests, the government agencies and the powerful conservation groups before any agreement could be reached. Actually, the first fence-mending job—the first step toward a good law—was probably the appearance of Assistant Forest Service Chief Edward C. Crafts before the Mining Congress two years ago. While no admissions of any concessions were made at this conclave, it was significant that the whole problem was discussed for the first time on the basis of the facts and with an absence of emotionalism. It was significant that Crafts, from that time on, labored diligently and with considerable effectiveness to arrange for a meeting of minds on neutral ground, so to speak, that might produce a workable solution. The conference called by Lowell Besley, executive director-forester of The American Forestry Association, last February represented the final fruition of these labors—recognition of the fact that all groups stood to gain by correction of the mining law abuses.

Oakes to Park Board

Appointment of John B. Oakes, *New York Times* editorial board member, to a six-year term on the Advisory Board on National Parks, Historic Sites, Buildings and Monuments, has been announced by Interior Secretary McKay. Mr. Oakes succeeds Bernard DeVoto, author and historian. Mr. Oakes, a former Rhodes scholar, has been with the *New York Times* since 1946.

In asking Senator Anderson, an old pro in the resources legislative field, if users of public lands were showing a somewhat more conciliatory and cooperative attitude, he answered thoughtfully that he thought this might be true but that in the case of the mining law amendments he felt it was largely due to the fact that the groundwork was carefully laid and that everyone knew exactly what was going on and why.

"The conference called by The American Forestry Association was of great help in this respect", Senator Anderson said. "As you know,

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many of us in Congress including my own office have been working on this for several years. This year found us further along than formerly. Then the AFA conference came along and complemented the work of many Senators and Congressmen and also produced some very practical ideas of its own. This enabled people in the Mining Congress, for example, to go out and tell their people just what was going on and why it was important. The same was true of the federal agencies that actively participated in the conference. And it was also true of the various conservation groups that were kept abreast of the developments."

This is the sort of thing that is of immeasurable help in the enactment of needed resources legislation, Senator Anderson indicated. Conceivably a similar healthy trend in the successful termination of another controversial problem—that of grazing uses as contrasted with other multiple uses—might be in the making, the Senator suggested; providing various users of the forests are disposed to talk it over. Recently-introduced grazing bills have been progressively better, the Senator said. For example, the recent Hope-Aiken grazing bill represented a vast improvement over the preceding one. This session saw the introduction of yet another multiple use grazing measure—one that would "nail down, for the first time, the rights and privileges of *all* users of the public lands." Senator Anderson said further that he was at a loss to understand why some conservation organizations had been slow to press for and take advantage of a bill that "recognizes by law, for the first time, their prerogatives on the public lands."

Here Senator Anderson was obviously referring to legislation developed by Hugh B. Woodward, a regional director of the National Wildlife Federation—and a close associate of the Senator's—and other western conservationists. This multiple use grazing bill was further refined and perfected by Dr. Ira Gabrielson, of the Wildlife Management Institute, and other eastern conservationists, prior to its introduction. The bill, in brief, declares the primacy of watershed protection over other uses, outlines the prerogatives of the various individual uses, and seeks to establish multiple use advisory councils that would give equal representation to all uses and which would advise the Secretary on all questions of policy.

No hearings have been scheduled for this bill during this session of Congress but next year will probably be a different story, Senator Anderson said.

"Another conference similar to AFA's mining get-together of this year might be helpful in this respect" one of Senator Anderson's top legislative aides injected into the conversation at this point.

In referring to his bill to correct mining law abuses (S. 1713) Senator Anderson said that it provides the means whereby most of the present abuses can be satisfactorily solved.

"It's a good bill as Barrett said and incidentally he was a great help in getting it through," Senator Anderson remarked. But it must be remembered that laws are only as good as their administration. I've seen good administration make a poor law look good and by the same token I've seen poor administration make a good law look bad. Administration is all important.

With both House and Senate bills now in conference and the measures practically law, both the Agriculture and Interior Departments are studying ways and means whereby the measures can best be implemented. New rules and regulations will be developed and the field people of both organizations fully instructed on how the provisions of the bill are to be carried out.

In this manner another plank in the AFA's Program for American Forestry will be carried out. Great credit for this legislation goes to Senators Anderson, Barrett, Bennett, Watkins, Aiken and many others in the Senate. The same is true of Representatives Dawson, Fjare, Young, Ellsworth, Cooley, Hope, others in the House.
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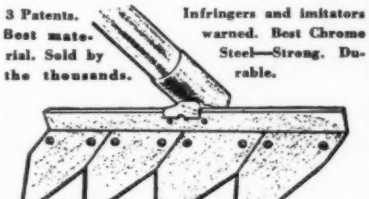

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Richardson To New Post

RON RICHARDSON, assistant managing director and editorial director of American Forest Products Industries, Incorporated, resigned effective August 1 to become assistant to the director of public relations of the Crown Zellerbach Corporation in San Francisco. Mr. Richardson, a native of the Northwest, has been a member of the AFPI staff for seven-and-a-half years. He came to AFPI from the Washington (D.C.) *Evening Star*. Prior to World War II service in the Navy he worked on newspapers in his home state of Washington. In the Navy he served as editor of *Naval Aviation News* and during the Bikini atomic bomb tests was on the staff of Admiral Blandy. He is a graduate of the school of journalism at the University of Washington.

Mr. Richardson

C. Edward Stout, presently administrative assistant and director of AFPI's industry division and a former southern field manager has been named to succeed Mr. Richardson as assistant managing director. Franklin Bradford, formerly assistant editorial director, is the newly-appointed editorial director.

Meanwhile, American Forest Products Industries announced last month that the American Tree Farm System of forest management and tax-paying timberlands has reached 35,396,564 acres.

James C. McClellan, AFPI chief forester, said mid-year Tree Farm figures show a gain of nearly two million acres in the program since January 1. Texas continues to lead the nation in tree farming with 3,438,970 acres. Arkansas has climbed to second place with 3,300,000 acres. Oregon, with 3,259,079 acres recently pulled ahead of Washington which has 3,231,608 acres. Florida retains a strong position with 3,177,321 acres. Another state which has topped the three million acre mark is Alabama.

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Forestry Therapy

(*From page* 11)

in the Senate to set up such a program.

And Capt. Haight, who did much of the initial planning, wants to see it widened to include all youths from 14 years up who need a job.

He wants some of the money now being spent for recreation programs diverted to youth work projects. "When kids become 14 these days they want a job, they want money in their pockets. But they have a hard time coming by either. That's why we need this program," he maintains.

Russell McDonald hopes it can be expanded to take in most of Salt Lake County's delinquents.

Paul Sagers, however, while admitting benefits could be derived from greater application of the plan, is doubtful it would work as well on a large scale without the tight control that exists in the Industrial School-Forest Service operation here.

But all agree that the main idea is a good one – get the boys into the forests, give them healthy, paying jobs under high type men – and the juvenile delinquency problem will be much closer to being solved.

Don Rochester Dies

Don Rochester, secretary of the Community Relations Committee of the American Paper and Pulp Association, died Sunday, July 3, at his family home in Cadillac, Michigan. His death followed a heart attack earlier this year that necessitated his leaving the industry community relations project he had built up from scratch since May, 1951.

Mr. Rochester

Since graduating from Central States Teachers College, Mt. Pleasant, Michigan, and Michigan State College, East Lansing, Michigan, Mr. Rochester worked in the fields of education, public forestry and industry but it was in the latter field that he became one of the most widely-known men in the whole pulp and paper field. Personable and energetic, Mr. Rochester in 1946 joined the newly-organized American Forest Products Industries and until 1951 visited woods industries companies in every state in the union, some several times, in helping to establish the work of that organization. In 1951 he returned to APPA (where he had worked as secretary of the Forest Industries Information Committee from 1944 to 1946) to head up APPA's newly organized Community Relations program. This job found Mr. Rochester "hitting the trail" once again in behalf of an industry cause. As Robert E. O'Connor, APPA assistant executive secretary, said "Don was the real stemwinder of this program."

Mr. Rochester's first assignment upon graduation from college was superintendent of the South Branch Rural Agriculture School, Hoxeyville, Michigan. After a short career in education, his deep interests in sports and conservation resulted in his joining the Michigan Department of Conservation where he became an assistant chief. From 1939 to 1941 he was with the U. S. Forest Service in Boston, Mass., as an assistant training officer and continued this work with the Federal Works Agency in Washington from 1942 to 1944. As representative of the whole industry during World War II, Mr. Rochester worked closely with Magazine Publishers Association and other organizations in a highly developed campaign to assure the industry's lumber and pulpwood supplies then in great shortage because of lack of woods labor. Establishment of prisoner of war camps to utilize prisoners in the production of lumber and pulpwood was one of the many assignments undertaken by Mr. Rochester during his period.

Oregon Fishing

(*From page 29*)

Largemouth black bass, catfish, blue gills, crappies, and perch are also numerous in Oregon although, of course, the trout, salmon, and steelhead are the anglers' top prizes there.

Oregon, incidentally, is one state the entire family will enjoy, regardless of whether they're all fishing fans. It is a varied state, well-developed in the tourist lines.

But you must be prepared to pay higher rates than in some of the Midwestern tourist areas. For instance, Elk Lake lodge in the heart of the Oregon Cascades, offers two-room cabins at $6 a day and $35 to $40 a week. These rates are only slightly higher than the cheaper tourist areas such as the Ozarks, however, and not as expensive at any time in the year as Florida, parts of California and New York.

Accommations are nearly always modern and normally excellent for the entire family.

How about boats? As an example, Crescent Lake resort offers 14-foot row boats at a dollar minimum, $2.50 a day, or $15.00 a week, which is not at all unreasonable.

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OUTDOOR WRITERS

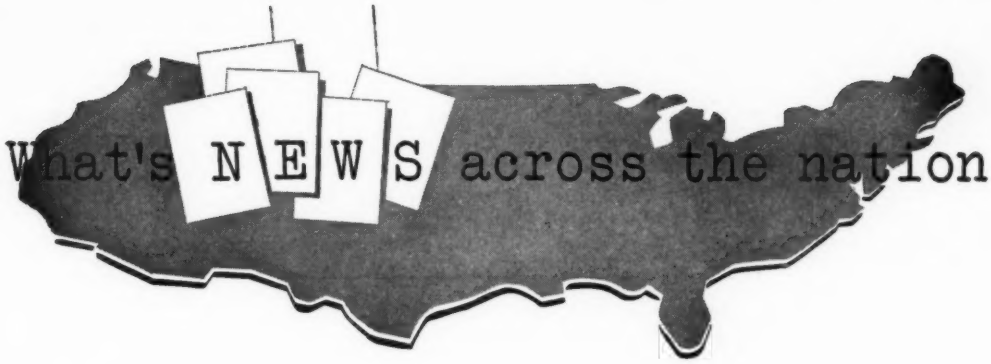
By Ron Richardson

SQUARE-TAIL trout in Maine's Rangely Lakes had a chance to look at the lures of some mighty important fishermen during the last two weeks of June. One of the fishermen was President Eisenhower on a vacation swing through northern New England. Others were members of the Outdoor Writers Association of America gathered at Rangely Lake for their annual meeting.

For the outdoor writers it was business mixed with pleasure in a week-long meeting that began June 19 and ended June 25. More than 180 OWAA members from the Northeast, South, Midwest and Canada attended the business sessions.

OWAA gave strong endorsement to a resolution asking enactment of the Anderson and Rogers bills (S1713) providing for certain changes in federal mining laws in relation to timber claims. The proposed legislation previously had been endorsed by The American Forestry Association, the National Lumber Manufacturers Association and the American Mining Congress.

Other resolutions passed by OWAA included: (1) An endorsement of the "Keep America Beautiful" campaign and a strongly worded statement encouraging the program's sponsors to extend and strengthen their fight against litterbugs. (2) Endorsement of the Metcalf bill (HR 1823) providing up to five and a half million dollars annually for recreational purposes and improvements of wildlife habitat on national forests. (3) A request that present federal legislation (S 890) on water pollution abatement be extended by Congress. (4) An endorsement of a bill (HR 5306) now before Congress that would require congressional approval of any action taken by the Secretary of Interior to release any part of the national wildlife refuge system. (5) Opposition to any of the pending versions of the Upper Colorado River project that include the possibility of construction of Echo Park dam in the Dinosaur National Park. (6) Opposition to enactment of the Hope (HR 4004) and Aiken (S1069) bills that permit the Secretary of Agriculture to sell narrow strips and isolated parcels of national forest land. The resolution asked that the proposed legislation be rewritten to include all possible safeguards for the national forest.



UNCLE SAM'S COMPETITION WITH PRIVATE ENTERPRISE IN THE POWER FIELD "has taken on many aspects which are a negation of our fundamental economic system," the Hoover Commission reports in its findings on Water Resources and Power. Contrary to advance speculation, however, the report opposes sale of the federal government's chain of hydroelectric power projects to private industry. "The problems involved cannot be solved by simple recommendations that such activities should cease and projects sold," the Commission said. But it strongly recommends that the government cease construction of additional steam plants and transmission lines. It also recommends a boost in existing federal power rates and said the Tennessee Valley Authority and other federal power agencies should obtain their money by selling their own securities instead of asking for appropriations from Congress.

LESS THAN TEN PERCENT OF THE WHOLE POPULATION WILL BE DIRECTLY BENEFITED when present federal big dam and power facilities are completed, the Commission said. It criticized the situation in which the federal taxpayer subsidizes construction of these projects while the tax burden is "very unequally distributed." New York, New Jersey and Pennsylvania, for instance, with 20 percent of the total population in the nation, pay 29 percent of the total tax bill yet receive no federal power. This situation is further aggravated by the fact that "preference" customers pay no federal taxes and little if any state or local taxes, the report said. The Task Force for the Commission estimated "that these exemptions from tax charges and other uneconomical rate-making practices caused revenues received from federal power sales in 1953 to fall about 40 percent below the value of the power."

AT THE SAME TIME THE FEDERAL GOVERNMENT'S SHARE OF THE NATION'S total electric generating capacity continues to wax larger, the Commission said. In 1933, the government owned only 0.7 percent of the total capacity. By the end of 1953, federal plants were generating 11.4 million kilowatts, or 12.4 percent of the total national figure. When presently authorized projects are completed the government's share will have gone up to 17 percent, the report said.

IN WHAT MAY BE HIS LAST WILL AND TESTAMENT TO THE AMERICAN PUBLIC, Mr. Hoover seems to be saying in effect "we can't turn back the clock" on these power developments "but it is time to put on the brakes" as regards a collectivist-type shift to public ownership that is the negation of the free enterprise system. The Commission grants that the original multiple purpose dams (beginning with the Hoover Dam) were at that time beyond the financial and technical strength of private enterprise. But it's a different story today, the Commission thinks. Growth of savings in the hands of private citizens and institutions now enable both private companies and non-federal public bodies to obtain enormous sums for the building of power plants. The private investment in the last 13 years is 11 billion dollars more than the total $2,300,000,000 cost of all the federal power installations completed by June, 1953. "Financially there is no present or prospective need for federal financing of power activities," the report said.

GOVERNMENT ACTIVITY IN THE HYDROELECTRIC power business over the past 53 years has produced "a multitude of inconsistencies and conflicts in politics and ac-

(Turn to next page)

tions," the report said. This is also true in irrigation, reclamation, navigation and flood control. In all these areas it found rivalries and duplication of effort between various government agencies, conflicts between the states and the federal government, faulty estimates of project costs, tax inequalities, and too much federal competition with private enterprise. The Soil Conservation Service in particular was singled out for criticism by the Commission for inflated estimates on prospective costs in its headwater dams program. Estimates made of flood damages by SCS are, in general, larger than those made by the Corps of Engineers, the Commission said. "In 1953 the Corps and SCS joined in a cooperative study sponsored by the Arkansas-White-Red Inter-Agency River Basin Committee," the Commission cited. "As a result of this study, the two agencies agreed upon an estimate of $9,618 for the annual damage in the same area in which, the year previously, the SCS had claimed $47,004 and the Corps $7,010." Transfer of the headwaters dams program of the SCS to the Corps was recommended by the Commission.

ONE OF THE COMMISSION'S ANSWERS TO THE PRESENT SITUATION is immediate adoption of a national water policy clearly defining the role to be played by the federal government, the states and local communities in the development, conservation and use of the nation's water resources. At the same time the Commission recommends creation of a Water Resources Board to be located in the Executive Office of the President. The board would be created from among the Cabinet members, together with five public members, presided over by a non-government chairman. The public members would be recruited from engineers, economists, and others of recognized ability. The Board's primary purpose would be to determine the broad policies for recommendation to the President, and, with his approval, to the Congress. The board would have the further duty of devising methods of coordination and plans of action both for the agencies in Washington and in the field.

RECOGNIZING WATER AND ITS CONTROL AS THE KEY TO MUCH FUTURE PROGRESS in the resources field, the Hoover report calls for an abrupt reversal in the trend to more and more government power projects and strikes hard at waste and duplication of effort on the part of federal agencies. Aside from its merits which are many, dissents by both administration and Democrat commissioners alike tended to nullify its impact in Washington. The report proper adopted by a majority of the Commission contained 124 pages. Dissents required 94 pages. Attorney General Herbert Brownell and Defense Mobilizer Arthur S. Flemming said they were afraid the report's recommendations "when taken all together" would impede the government's partnership program in the resources field. Commission member James J. Farley, former Postmaster General under President Roosevelt, said the cumulative effect of the recommendations "came dangerously close to inviting an abdication by the federal government of its responsibilities to insure the proper development of this country's great natural resources."

MOST UNKIND CUT OF ALL WAS THAT OF REP. CHET HOLIFIELD (Dem., Calif.), who said the report invested 20 years of private power company propaganda with an unbecoming dignity—which indirect charge at Mr. Hoover himself is already being discounted by Americans who, in recent years, have become increasingly conscious of the former President's great and unselfish contributions to his country. Writes one AFA member who has known Mr. Hoover for years ". . . The fact that Mr. Hoover has never hesitated to tell Americans unpleasant truths about taxes and similar unpleasant subjects has not always endeared him to Americans. Like a stern-principled but at the same time devoted grandfather he has always laid the facts on the line. He continues to lay the facts on the line in this new report on power and water and, as usual, those facts find us squirming under them."

IN THE DISSENTS OF BROWNELL, FLEMMING AND FARLEY AND IN THE REPORT ITSELF one detects a careful weighing of that rightful balance government should seek to achieve in future power and resources programs. It will not be an easy task. At the moment, the administration's "partnership" program represents a middle-of-the-road course and it now remains to be seen how much or how little of the monumental Hoover Report on water and power it will attempt to adopt. Meanwhile, having completed the voluminous job that will probably be his last great service to the American people, Mr. Hoover had gone fishing. Regardless of their views on his Commission recommendations, most Americans will join in wishing him the best of luck. (J.B.C.)

Letters to the Editor

(From page 3)

sion of the lodges and concessions of Yellowstone. I am convinced that this move is of tremendous public interest and should be of concern to all members of The American Forestry Association.

Ernest H. Linford
Chief Editorial Writer
The Salt Lake Tribune
Salt Lake City 10, Utah

Termite Counter-Attack

EDITOR:

Although I do agree with much of Mr. Long's article in your May issue (Termite Counter-Attack), I do take issue with his statement concerning "expensive treated lumber" and his contention that soil poison combined with good construction practice is the real answer for termites. Good construction is of first importance regardless of what other measures are used to prevent attack by wood-destroying insects and fungi.

Properly treated wood does and should cost more than untreated wood because it is a much better material for the conditions under which it is to be used. The additional cost for treated lumber for the plates, joists, sub-floor, and studs would be a small but very worthwhile investment for permanent protection against all wood-destroying organisms where such protection is needed.

Soil poisons are effective against termites when properly applied; however, as pointed out by Mr. Long, they are not permanent (4-5 years), nor do they provide protection against fungi, which may cause as much or more damage than termites. No mention was made of the hazards of soil poisons to man, which can be serious. Their cost and application cannot be considered inexpensive. We have much to learn about them. Soil poisons do have a part to play in the prevention of termite attack, but they are not cure-alls.

Treated wood also plays an important function in providing trouble free homes and buildings that really last.

Robert D. Graham
Oregon Forest Products Laboratory
Corvallis, Oregon

Survey Article Praised

EDITOR:

As a subscriber to *American Forests* for a number of years it has been my experience that I find, from time to time, a number of articles of professional interest that I don't read elsewhere. This is of value to me personally and in turn I bring these articles to the attention of the students in my courses.

The June issue contains a very interesting article by H. R. Josephson on Progress on the Forest Survey. I should like very much to have a few reprints of this article for use in my forest photogrammetry course which is concerned in part with forest inventories.

I enjoyed the article about Austin Cary very much. I think the readers of *American Forests* would enjoy an article about Mr. LaCroix, the fabulous Canadian jobber who built the first gravel roads, first steel bridge, and one of the first to use trucks on pulpwood operations in Maine. I have heard many stories about him that place him in the class of a leader and a pioneer of considerable magnitude.

Harold E. Young
Associate Professor
Department of Forestry
University of Maine

Battle of the Bottomlands

EDITOR:

Albert G. Hall's article in your June issue (Battle of the Bottomlands) shows what all friends of the forest can do when they gang up on the Army Engineers or other members of the pork barrel crowd. There is a great moral here and foresters, wildlife people and all others interested in preserving our forest preserves should make note of it. In union there is strength.

L. J. Glover
St. Louis, Missouri

Shot Heard 'Round the South

EDITOR:

We think the editorial "The Shot Heard 'Round the South" in your June issue is so well written and presents such a good case for similar action in this state that we would like to request your permission to reproduce it for mailing from this office to all South Carolina weekly and daily editors. . .

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Photos used on this page will be of unusual rather than esthetic qualities and subject matter will be restricted to scenes, events, objects or persons related to the use, enjoyment or unique aspects of our renewable natural resources For each picture selected AMERICAN FORESTS *will pay $10*

Photo submitted by Nora Diltz, Fresno, California

Standing at an elevation of 6000 feet on Sentinel Dome, this 400-year-old Jeffrey pine gives the appearance of growing out of solid granite. Actually, the tree roots have taken advantage of several large cracks in the disintegrating rock structure

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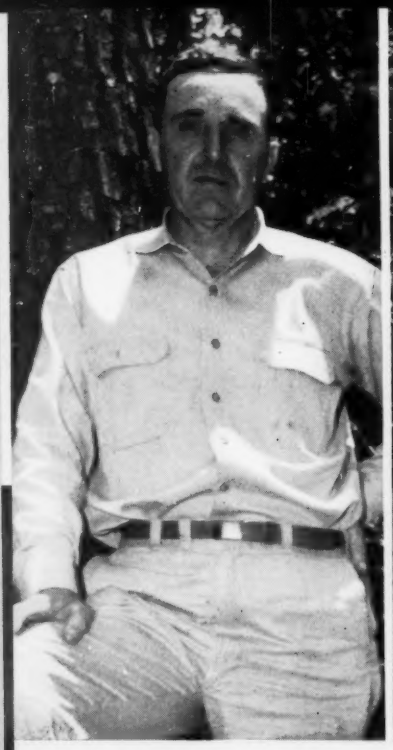
USE RESERVATION COUPON ON PAGE 60



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